NON-COATED REINFORCING BAR DEVELOPMENT AND SPLICE LENGTHS

fc - 4000 PSI				
BAR SIZE	Ld	Ldt	Lt	Ltt
#3	15	20	20	26
#4	19	25	25	33
#5	24	32	32	41
#6	29	38	38	50
#7	42	55	55	71
#8	48	63	63	82
#9	54	71	71	92
#10	60	78	78	102
#10	66	86	86	112

ALL CONCRETE STRENGTHS			
BAR SIZE	Lb	Lc	Lcs
#3	9	12	12
#4	11	13	12
#5	14	16	15
#6	17	19	17
#7	20	22	20
#8	22	25	23
#9	25	29	26
#10	28	32	29
#10	31	35	31

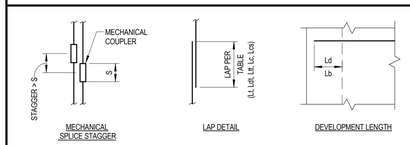
EPOXY COATED REINFORCING BAR DEVELOPMENT AND SPLICE LENGTHS

fc - 4000 PSI				
BAR SIZE	Ld	Ldt	Lt	Ltt
#3	22	29	29	38
#4	29	38	38	50
#5	36	47	47	61
#6	43	56	56	73
#7	63	82	82	107
#8	72	94	94	122
#9	81	106	106	137
#10	89	116	116	151
#10	98	128	128	166

ALL CONCRETE STRENGTHS			
BAR SIZE	Lb	Lc	Lcs
#3	9	12	12
#4	11	13	12
#5	14	16	15
#6	17	19	17
#7	20	22	20
#8	22	25	23
#9	25	29	26
#10	28	32	29
#10	31	35	31

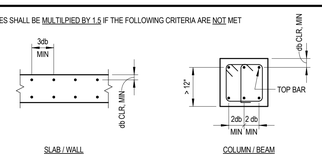
NOTES:

1. db = NOMINAL BAR DIAMETER
   Ld = TENSION DEVELOPMENT LENGTH
   Ldt = DEVELOPMENT LENGTH OF TOP BARS IN TENSION
   Lt = TENSION LAP SPLICE LENGTH
   Ltt = TENSION LAP SPLICE LENGTH OF TOP BARS
   Lb = COMPRESSION DEVELOPMENT LENGTH
   Lc = TIED COLUMN LAP SPLICE IN COMPRESSION
   Lcs = SPIRAL COLUMN LAP SPLICE IN COMPRESSION
2. REBAR DEVELOPMENT/SPLICE LENGTHS ARE BASED ON ACI 318. REINFORCEMENT YIELD STRENGTH, Fy = 60 KSI.
3. "TOP BARS" = HORIZONTAL BEAM, MAT, OR SLAB REINFORCING WITH MORE THAN 12" CAST BELOW.
4. ALL SPLICES SHALL BE TENSION SPLICES, UNO

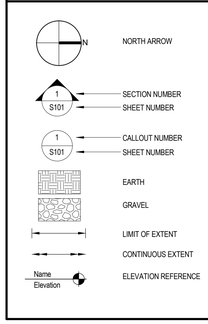


TYPICAL REINFORCING BAR DEVELOPMENT / SPLICE DETAILS

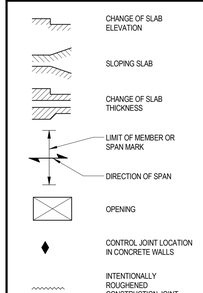
TABLE VALUES SHALL BE MULTIPLIED BY 1.5 IF THE FOLLOWING CRITERIA ARE NOT MET



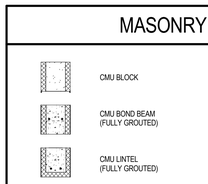
MISCELLANEOUS SYMBOLS



CONCRETE SYMBOLS



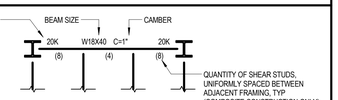
MASONRY MEMBERS



STRUCTURAL DRAWINGS ABBREVIATIONS

A/E	ARCHITECT/ENGINEER
ACI	AMERICAN CONCRETE INSTITUTE
ACP	AUGER CAST PILE
ADDL	ADDITIONAL
ADJ	ADJACENT
AGGR	AGGREGATE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BAL	BALANCE
BD	BOARD
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOTT	BOTTOM
BRG	BEARING
BRKT	BRACKET
BTWN	BETWEEN
C	STANDARD CHANNEL
CANT	CANTILEVER
CC	CENTER TO CENTER
CF	COLD FORMED
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY STRAND
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEARANCE, CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
CTRD	CENTERED
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CYD	CUBIC YARD
CW	CONCRETE WALL
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLITION, DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DN	DOWN
DO	DITTO
DP	DRILLED PIER OR DEEP
DWG	DRAWING
DWL	DOWELS
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL, ELEV	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
ENGR	ENGINEER
EOD	EDGE OF DECK
EOJ	EDGE OF JOIST
EOS	EDGE OF SLAB
EQ	EQUAL
EQPT	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EX	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FAB	FROM ADJACENT BEAM
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH
FLG	FLANGE
FLR	FLOOR
FS	FOOTING STEP
FT	FEET
FTG	FOOTING
FTGD	FOOTING DRAIN
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GRND	GROUND
GSN	GENERAL STRUCTURAL NOTES
GT	GIRDER TRUSS
HAS, HS	HEADED ANCHOR STUD
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HOLLOW STRUCTURAL SECTION
HT	HIP TRUSS
HVAC	HEATING, VENTILATION, AIR CONDITIONING
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INCL	INCLUDE
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
J/BRG	JOIST BEARING
JST	JOIST
JT	JOINT
KB	KNEE BRACE
KIP, K	1,000 POUNDS
KO	KNOCK-OUT
KSI	KIPS PER SQUARE INCH
L	ANGLE OR LENGTH
LAB	LABORATORY
LB	POUND
LF	LINEAL FOOT
LIN	LINEAL, LINEAR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONGIT	LONGITUDINAL
LP	LOW POINT
LSLT	LONG SLOTTED HOLE
LTWT	LIGHT WEIGHT
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MEMB	MEMBRANE
MEP	MECHANICAL/ ELECTRICAL/ PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MULT	MULTIPLE
N/A	NOT APPLICABLE
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OFD	OVERFLOW DRAIN
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OPPHD	OPPOSITE HAND
ORIG	ORIGINAL
O/S	OVERSIZED HOLE
P	PIER
PC	PRECAST
PCSW	PRECAST SHEARWALL
PERIM	PERIMETER
PERM	PERMANENT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PREFAB	PREFABRICATED
PREL	PRELIMINARY
PREP	PREPARATION, PREPARE
PROJ	PROJECTION
PS	PRESTRESSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POST-TENSIONED
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCEMENT, REINFORCE
REQD	REQUIRED
RO	ROUGH OPENING
SCH	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SL-DN	SLOPE DOWN
SL-UP	SLOPE UP
SOG	SLAB-ON-GRADE
SP	SHEET PILING
SPA	SPACES, SPACE
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
SSLT	SHORT SLOTTED HOLE
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUC	STRUCTURAL
SYM	SYMMETRICAL
T & B	TOP AND BOTTOM
T/	TOP OF
TGB	TOP OF GRADE BEAM
TBS	MECHANICAL TENSION BUTT SPLICE
TEMP	TEMPERATURE
TF	TRENCH FOOTING
THRU	THROUGH
TRANS	TRANSVERSE
TYP	TYPICAL
UL	UNDERWRITERS' LABORATORY INC.
UNO	UNLESS NOTED OTHERWISE
UT	ULTRA-SONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WIDE FLANGE
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WALL FOOTING
WP	WORK POINT
WWF	WELDED WIRE FABRIC

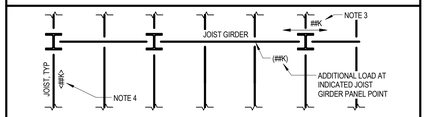
BEAM LEGEND



NOTES:

1) REACTION VALUE IS ASD (KIPS), UNO.
2) WHERE NO VALUE IS SHOWN, DESIGN CONNECTION FOR A MINIMUM REACTION OF 10 KIPS.
3) SPACE STUDS PER TYPICAL SHEAR STUD PLACEMENT DETAIL. MINIMUM NUMBER OF STUDS PER GENERAL NOTES.
4) "M" IN PLACE OF BEAM SHAPE INDICATES W10X12 WITH MINIMUM CONNECTION.
5) HSS IN PLACE OF SHAPE INDICATES HSS10X4X5/16, UNO.
6) BEAMS ARE PRIMARY MEMBERS FOR FIREPROOFING UNLESS NOTED AS SECONDARY.
7) POSITIVE CAMBER UPWARDS, NEGATIVE CAMBER DOWNWARDS. CAMBER SHOWN ON CANTILEVERS IS AT END OF CANTILEVER.

SUPPLEMENTAL LOAD LEGEND



NOTES:

1. LOAD IS ASD LIVE LOAD (KIPS), UNO.
2. LOAD IS IN ADDITION TO TYPICAL PANEL POINT LOADS, UNO.
3. LATERAL FORCE TO BE TRANSFERRED THROUGH SUPPORT BY CONNECTIONS, IN ADDITION TO VERTICAL REACTION FORCES. FORCE MAY ACT IN EITHER DIRECTION.
4. TOP CHORD AXIAL FORCE IN ADDITION TO CHORD FORCES PRODUCED BY VERTICAL LOADS. FORCE MAY BE EITHER COMPRESSION OR TENSION.

STRUCTURAL SHEET LIST

SHEET NUMBER	SHEET NAME
SI001	ABBREVIATIONS AND SYMBOLS
SI002	GENERAL NOTES
SI003	LOAD MAP
SB101	FOUNDATION PLAN
SB401	ENLARGED FOUNDATION PLANS
SB501	TYPICAL FOUNDATION DETAILS
SB502	FOUNDATION SECTIONS AND DETAILS
SB601	FOUNDATION SCHEDULES AND DETAILS
SF101	SLAB ON GRADE LEVEL 1
SF102	FRAMING PLAN LEVEL 2
SF103	FRAMING PLAN LEVEL 3
SF104	FRAMING PLAN LEVEL 4
SF201	BUILDING ELEVATIONS
SF202	CAST IN PLACE WALL ELEVATIONS
SF203	SHEARWALL ELEVATIONS AND SCHEDULES
SF204	PRECAST ELEVATIONS AND SCHEDULES
SF401	ENLARGED STAIR PLANS
SF501	TYPICAL PRECAST DETAILS
SF502	FRAMING SECTIONS AND DETAILS
SF901	ISOMETRICS

DEDUCT ALTERNATES

1. DEDUCT 1
   a. REMOVE ELEVATOR #2 CAB AND EQUIPMENT. ELEVATOR HOIST WAY TO REMAIN.
   b. REMOVE CAR/PARKING COUNT SYSTEM
   c. REMOVE STOREFRONT FROM STAIR SHAFTS
2. DEDUCT 2
   a. DEDUCT LEVEL 4 PRECAST CONCRETE STRUCTURE AND ASSOCIATED ITEMS TO COLUMN LINE 7.
   b. REDUCE STAIR AND ELEVATOR TOWER 1 LEVEL
3. DEDUCT 3
   a. DEDUCT LEVEL 4 PRECAST CONCRETE STRUCTURE AND ASSOCIATED ITEMS FROM COLUMN LINE 7 TO LEVEL 3 RAMP COLUMN LINE 3.
   b. REDUCE NORTH STAIR TOWER 1 LEVEL.
   c. REMOVE SILANE SEALER ON ALL LEVELS.

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Revisions:	Date

U.S. Department of Veterans Affairs
Michael E. DeBakey VAMC
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100% CONSTRUCTION DOCUMENTS

Drawing Title: ABBREVIATIONS AND SYMBOLS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SI001	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		U.S. Department of Veterans Affairs

GENERAL

THE STRUCTURE HAS BEEN DESIGNED FOR THE IN-SERVICE LOADS ONLY. THE METHODS, MEANS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS, TIEDOWNS, ETC.

THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS.

THE GENERAL NOTES ON THE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE FULL WRITTEN MATERIAL SPECIFICATIONS (IF ANY) FOR THE PROJECT. IF A DISCREPANCY OCCURS BETWEEN THE NOTES AND THE FULL SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

NO PENETRATIONS THROUGH STRUCTURAL ELEMENTS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, SHALL BE MADE WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

CONCRETE MIX DESIGN SUBMITTAL

THE CONTRACTOR SHALL SUBMIT FOR THE REVIEW OF THE STRUCTURAL ENGINEER A MIX DESIGN FOR EACH PROPOSED CLASS OF CONCRETE. EACH MIX DESIGN SHALL BE IDENTIFIED BY A MIX NUMBER OR OTHER UNIQUE IDENTIFICATION. THE CONTRACTOR SHALL NOT VARY FROM THE MIX DESIGNS NOR USE ANY CONCRETE OTHER THAN THE APPROVED MIX DESIGNS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. MIX DESIGN SUBMITTALS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. MIX DESIGN NUMBER OR UNIQUE IDENTIFICATION AND INTENDED LOCATION OF PLACEMENT.
2. CEMENT TYPE, PROPORTION AND NAME OF MANUFACTURER.
3. FLY ASH PROPORTION (WHEN USED), LABORATORY ANALYSIS CERTIFICATION, AND NAME AND LOCATION OF SUPPLIER.
4. COURSE AGGREGATE PROPORTION, GRADATION REPORT, NAME AND LOCATION OF SUPPLIER.
5. FINE AGGREGATE PROPORTION, GRADATION REPORT, NAME AND LOCATION OF SUPPLIER.
6. MIXING WATER PROPORTION AND SOURCE.
7. ADMIXTURE DOSAGES, PRODUCT NAME(S) AND MANUFACTURER NAME(S).
8. FIBER REINFORCEMENT DOSAGE (WHEN USED), PRODUCT NAME AND MANUFACTURER NAME.
9. DESIGN 28-DAY COMPRESSIVE STRENGTH (F'C).
10. DESIGN SLUMP RANGE.
11. DESIGN AIR-ENTRAINMENT (FOR CONCRETE REQUIRING ENTRAINED AIR).
12. STATISTICAL ANALYSIS OF LABORATORY STRENGTH TEST DATA IN ACCORDANCE WITH "STANDARD DEVIATION" DETERMINATION OUTLINED IN ACI 318.

SHOP DRAWING SUBMITTALS

THE CONTRACTOR SHALL PREPARE DETAILED SHOP DRAWINGS TO ENABLE HIM TO FABRICATE, ERECT AND CONSTRUCT ALL PARTS OF THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THESE SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS, ACCURACY AND FIT OF WORK.

ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE STRUCTURAL ENGINEER. DRAWINGS SUBMITTED WITHOUT CONTRACTOR'S REVIEW WILL BE RETURNED UNCHECKED.

SUBMIT HARD COPIES OR ELECTRONIC VERSIONS OF SHOP DRAWINGS. FOR HARD COPY OPTION, SUBMIT A MINIMUM OF TWO COPIES OF SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW (ONE COPY SHALL BE RETAINED BY THE STRUCTURAL ENGINEER). FOR ELECTRONIC OPTION, SUBMIT SHOP DRAWINGS IN ADOBE PDF FORMAT.

SUBMIT SHOP DRAWINGS FOR EACH OF THE FOLLOWING ITEMS:

1. CONCRETE REINFORCEMENT
2. CONCRETE MASONRY REINFORCEMENT
3. STRUCTURAL STEEL (INCLUDING DESIGN CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS CONSTRUCTED FOR ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS)
4. STEEL DECK
5. PRECAST CONCRETE COMPONENTS (PRECAST LINTELS, ARCHITECTURAL PRECAST)
6. GLASS CURTAIN WALL SYSTEM (INCLUDING DESIGN CALCULATIONS AND CONNECTION DETAILS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS CONSTRUCTED)
7. STEEL PILES
8. POST-TENSIONING
9. METAL MESH SYSTEM (INCLUDING DESIGN CALCULATIONS AND CONNECTION DETAILS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS CONSTRUCTED)

PRODUCT DATA SUBMITTALS

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL PRODUCT DATA FOR THE SPECIFIC ITEMS LISTED BELOW. CONTRACTOR SHALL NOT USE PRODUCTS OTHER THAN THOSE SUBMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

MANUFACTURER'S TRADE NAMES AND NUMBERS USED HEREIN ARE ONLY TO IDENTIFY COLORS, FINISHES, TEXTURES, AND PATTERNS AS A BASIS OF DESIGN. PRODUCTS OF AUTHORIZED EQUAL MANUFACTURER'S EQUIVALENT TO COLORS, FINISHES, TEXTURES, AND PATTERNS OF MANUFACTURERS LISTED THAT MEET REQUIREMENTS OF TECHNICAL SPECIFICATIONS IN EVERY RESPECT MAY BE ACCEPTABLE WITH SUBMITTAL OF A COMPLETED SUBSTITUTION REQUEST CONTAINING ALL PRODUCT DATA, TESTING AND ACTUAL SAMPLES, AND UPON APPROVAL IN WRITING BY CONTRACTING OFFICER.

SUBMIT HARD COPIES OR ELECTRONIC VERSIONS OF PRODUCT DATA. FOR HARD COPY OPTION, SUBMIT A MINIMUM OF TWO COPIES OF PRODUCT DATA TO THE STRUCTURAL ENGINEER FOR REVIEW (ONE COPY SHALL BE RETAINED BY THE STRUCTURAL ENGINEER). FOR ELECTRONIC OPTION, SUBMIT PRODUCT DATA IN ADOBE PDF FORMAT.

1. FIBER REINFORCEMENT FOR CONCRETE
2. DIAMOND PLATE DOWELS FOR SLABS ON GRADE
3. CONCRETE CURING COMPOUND
4. CONCRETE JOINT SEALANT
5. WATER STOPS
6. MASONRY JOINT REINFORCEMENT
7. EXPANSION ANCHORS
8. ADHESIVE ANCHORS
9. NON-SHRINK GROUT

FOUNDATIONS

FOUNDATION EXCAVATIONS AND SOIL RELATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL PROJECT NUMBER 92155053 PREPARED BY TERRACON DATED APRIL16, 2015.

FOUNDATIONS HAVE BEEN DESIGNED BASED ON ASSUMED ALLOWABLE CAPACITIES INDICATED BELOW. CONTRACTOR SHALL ENGAGE A LICENSED GEOTECHNICAL ENGINEER TO REVIEW THE SOIL CONDITIONS AT THE SITE AS NECESSARY TO CONFIRM THE ALLOWABLE CAPACITIES PRIOR TO PLACEMENT OF THE FOUNDATIONS. CONFIRMATION OF THE ACCEPTABILITY OF THE SOILS SHALL BE REPORTED IN WRITING TO THE STRUCTURAL ENGINEER.

IF ACTUAL ALLOWABLE CAPACITIES ARE FOUND TO BE LESS THAN THE ASSUMED VALUES, THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER IMMEDIATELY AND SHALL NOT PROCEED WITH FOUNDATION CONSTRUCTION WITHOUT REVIEW BY THE STRUCTURAL ENGINEER.

FOOTING DESIGN NET ALLOWABLE BEARING PRESSURE:

STRIP FOOTINGS:	NET TOTAL LOAD - 4,000 PSF
INDIVIDUAL FOOTINGS:	NET DEAD PLUS SUSTAINED LIVE LOAD - 4,000 PSF
	NET TOTAL LOAD - 6,000 PSF

FOUNDATIONS AND SOILS RELATED WORK SHALL BE INSPECTED BY A LICENSED GEOTECHNICAL ENGINEER. WRITTEN FIELD REPORTS SHALL BE FORWARDED TO THE STRUCTURAL ENGINEER AS SOON AS THEY BECOME AVAILABLE.

FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, SHALL BE REPORTED TO THE STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.

EXCAVATIONS FOR SPREAD FOOTINGS, COMBINED FOOTINGS, CONTINUOUS FOOTINGS AND MAT FOUNDATIONS SHALL BE CLEANED AND HAND TAMPED TO UNIFORM SURFACE AND SHALL BE PROTECTED AND MAINTAINED UNIFORM UNTIL CONCRETE IS PLACED.

BELOW-GRADE WALLS

DO NOT BACKFILL AGAINST BELOW-GRADE CONCRETE (OR MASONRY) WALLS UNTIL THE CONCRETE (OR MASONRY ASSEMBLAGE) HAS REACHED ITS 28-DAY COMPRESSIVE STRENGTH.

WHERE BACKFILL IS REQUIRED ON BOTH SIDES OF BELOW-GRADE WALLS, BACKFILL EVENLY ON EACH SIDE OF EACH WALL TO PREVENT UNBALANCED SOIL LOADS AGAINST THE WALL.

CONCRETE

REINFORCED CONCRETE HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318) AND COMMENTARY (ACI 318R).

MIXING, TRANSPORTING, AND PLACING OF CONCRETE SHALL CONFORM TO THE LATEST EDITION OF THE SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301). READY-MIXED CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C94. IN CASE OF A DISCREPANCY, THE PLANS AND SPECIFICATIONS SHALL GOVERN.

CEMENT SHALL CONFORM TO ASTM C150, TYPE I, UNO.

FLY ASH SHALL CONFORM TO ASTM C618, CLASS C OR F. THE RATIO OF THE AMOUNT (BY WEIGHT) OF FLY ASH TO TOTAL CEMENTITIOUS MATERIALS IN THE MIX SHALL NOT EXCEED 25 PERCENT.

NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C33.

WATER-REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494.

AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260 AND SHALL BE CERTIFIED BY THE MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES.

CALCIUM CHLORIDE ADMIXTURES OR ADMIXTURES CONTAINING MORE THAN 0.1 PERCENT CHLORIDE IONS SHALL NOT BE USED.

IN COLD WEATHER CONDITIONS, MIXING, PLACING, FINISHING, CURING AND PROTECTION OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 306R, COLD WEATHER CONCRETING.

IN HOT WEATHER CONDITIONS, MIXING, PLACING, FINISHING, CURING AND PROTECTION OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 305R, HOT WEATHER CONCRETING.

USE OF CONSTRUCTION JOINTS AT LOCATIONS OTHER THAN THOSE INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

SLUMP FOR PUMPED CONCRETE SHALL BE MEASURED AT POINT OF DISCHARGE.

NORMAL WEIGHT CONCRETE SHALL BE USED IN THE FOLLOWING AREAS AND SHALL HAVE THE PROPERTIES AS SHOWN BELOW:

DESCRIPTION	MIX	MAX CHLORIDE ION	MAX W/C RATIO	AVG ENTRAINED AIR
SPREAD FOOTINGS	4000 STD	0.30	0.50	N/A
COLUMNS	5000 CNA/SPA	0.15	0.40	6-1/2%
BEAMS, SLABS & STAIRS	5000 CNA/SPA	0.06	0.40	6-1/2%
SLAB-ON-GRADE	4000 SF	0.15	0.40	6-1/2%
WALLS	5000 CNA/SPA	0.15	0.40	6-1/2%
ISLANDS & HOUSE-KEEPING PADS	4000 STD/F	0.15	0.40	6-1/2%
ALL OTHERS	4000 STD	0.30	0.40	6-1/2%

NOTES:
1. STD: DESIGNATES A CONCRETE MIX DESIGN IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00 WHICH DOES NOT REQUIRE A SILICA FUME, GGBS/FLY ASH OR CALCIUM NITRATE ADMIXTURE.
2. CNA: DESIGNATES A CONCRETE MIX DESIGN IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00 WHICH CONTAINS 3 GAL/CY OF CALCIUM NITRATE CORROSION-INHIBITOR ADMIXTURE.
3. SPA: DESIGNATES A CONCRETE MIX DESIGN IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00 WHICH CONTAINS 12% MINIMUM OF GGBS BY WEIGHT OF CEMENT AND 20% MINIMUM OF FLY ASH BY WEIGHT OF CEMENT.
4. SUFFIX-S: DESIGNATES A CONCRETE MIX DESIGN WITH 1-1/2 LBS STRUCTURAL MACRO FIBERS PER CUBIC YARD OF CONCRETE OR 1 LBS MICROFILAMENT REINFORCEMENT PER CUBIC YARD OF CONCRETE.
5. SUFFIX-SF: DESIGNATES A CONCRETE MIX DESIGN WITH 4-1/2 LBS STRUCTURAL MACRO FIBERS PER CUBIC YARD OF CONCRETE.
6. ALL NORMAL WEIGHT CONCRETE TO HAVE A DENSITY OF APPROXIMATELY 145 PCF UNLESS NOTED OTHERWISE.
7. AVERAGE AIR-ENTRAINED VALUES ARE FOR IN-PLACE CONCRETE. TOLERANCE ON TOTAL AIR CONTENT IS 1-1/2% PER ACI.
8. ALL AIR-ENTRAINED CONCRETE SHALL INCLUDE 564 LBS OF CEMENT MINIMUM PER CUBIC YARD OF CONCRETE. THE WEIGHT OF FLY ASH AND GGBS ADMIXTURE(S) MAY BE INCLUDED WITH THE WEIGHT OF CEMENT.

PRECAST PLANKS

DESIGN AND INSTALL PRECAST PLANKS IN ACCORDANCE WITH ACI 318 AND THE PCI DESIGN HANDBOOK, CURRENT EDITIONS. DESIGN FOR LOADS INDICATED ON THE DRAWINGS.

PROVIDE OPENINGS (AND OPENING FRAMING WHERE REQUIRED) FOR ALL PENETRATIONS. REFER TO THE MECHANICAL DRAWINGS FOR MECHANICAL PENETRATIONS AND COORDINATE FINAL LOCATIONS AND SIZES WITH THE MECHANICAL CONTRACTOR.

HOLLOW CORE PRECAST PLANKS

PROVIDE OPENINGS (AND OPENING FRAMING WHERE REQUIRED) FOR ALL PENETRATIONS. REFER TO THE MECHANICAL DRAWINGS FOR MECHANICAL PENETRATIONS AND COORDINATE FINAL LOCATIONS AND SIZES WITH THE MECHANICAL CONTRACTOR.

STRUCTURAL PRECAST CONCRETE (GENERAL)

SUPPLIER OF STRUCTURAL PRECAST CONCRETE IS RESPONSIBLE FOR THE DESIGN, DETAILING, AND INSTALLATION OF THE PRECAST MEMBERS AND CONNECTIONS. DESIGN AND INSTALL PANELS IN ACCORDANCE WITH ACI 318 AND THE PCI DESIGN HANDBOOK, CURRENT EDITIONS. MANUFACTURE IN ACCORDANCE WITH MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF STRUCTURAL PRECAST CONCRETE PRODUCTS (PCI MNL 116).

THE PRECAST SUPPLIER SHALL ENGAGE A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS CONSTRUCTED TO PERFORM THE DESIGN.

PRECAST SUPPLIER IS RESPONSIBLE FOR TEMPORARY BRACING, GUYS, TIEDOWNS, DEADMEN, ETC. AS REQUIRED TO SUPPORT STRUCTURAL PRECAST UNTIL THE STRUCTURAL FRAMING SYSTEM AND DECKING INSTALLATION ARE COMPLETE AND FINAL STABILITY IS ACHIEVED.

CONTRACTOR SHALL DESIGN ALL PRECAST MEMBERS AND ERECTION ASSEMBLIES FOR DESIGN AND TEMPORARY ERECTION FORCES, ERECTION SEQUENCING, GUY STAYING AND SHORING. CONTRACTOR SHALL CONFIRM ALL APPROPRIATE CONNECTIONS ARE COMPLETED AND REQUIRED GROUTING HAS OCCURRED TO ENSURE STABILITY DURING CONSTRUCTION BEFORE ERECTING STRUCTURE VERTICALLY.

EMBEDS AND OTHER STEEL ITEMS TO BE EMBEDDED IN THE PRECAST ARE TO BE PROVIDED AND INSTALLED BY THE PRECASTER, UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL ITEMS TO BE FIELD WELDED TO EMBEDDED ITEMS IN THE PRECAST ARE TO BE PROVIDED AND INSTALLED BY THE STEEL ERECTOR, UNLESS NOTED OTHERWISE.

EMBEDS AND OTHER ITEMS TO BE EMBEDDED IN CAST-IN-PLACE CONCRETE SHALL BE SUPPLIED BY THE PRECASTER AND INSTALLED BY THE CONCRETE CONTRACTOR, UNLESS NOTED OTHERWISE.

IF THE DETAILS INDICATED ON THESE DRAWINGS NEED TO BE MODIFIED TO ACCOMMODATE THE PRECAST SUPPLIER'S FABRICATION OR INSTALLATION STANDARDS, THE PRECASTER MUST INFORM THE STRUCTURAL ENGINEER AND ALL AFFECTED FABRICATORS AND CONTRACTORS PRIOR TO FABRICATION OF AFFECTED MATERIALS. MODIFICATIONS REQUESTED BY THE PRECASTER AFTER THE AFFECTED ITEMS ARE FABRICATED SHALL BE SOLELY THE RESPONSIBILITY OF THE PRECASTER (INCLUDING ENGINEERING, MATERIAL AND INSTALLATION) AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE PROJECT.

COORDINATE ALL OPENINGS, REVEALS, DRIP EDGES, BLOCKOUTS, INSERTS, ETC. TO BE CAST INTO PRECAST MEMBERS WITH STRUCTURAL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. AS PART OF THE SUBMITTAL PROCESS COORDINATION OF EXACT SIZES IS REQUIRED AND SHALL BE PERFORMED BY THE CONTRACTOR.

DESCRIPTION	F'C PSI, MIX	MAX W/C RATIO	AVERAGE ENTRAINED AIR	MAXIMUM SLUMP	MAXIMUM COARSE AGGREGATE SIZE
COLUMNS, LIGHT WALLS & WALLS	6000 STD	0.38	5.5% +/- 1%	N/A	.75"
BEAMS, DOUBLE TEES (PRETOPPED), STAIRS & SPANDRELS	6000 CNA	0.38	5.5% +/- 1%	N/A	.75"
CAST-IN-PLACE TOPPING, WASHES & POUR STRIPS	4000 CNA	0.40	5.5% +/- 1%	N/A	.75"

NOTES:

1. "STD" INDICATES A CONCRETE MIX DESIGN IN ACCORDANCE WITH SPECIFICATION WHICH DOES NOT REQUIRE A SILICA FUME, GGBS/FLY ASH OR CALCIUM NITRITE ADMIXTURE.
2. "CNA" INDICATES A CONCRETE MIX DESIGN IN ACCORDANCE WITH SPECIFICATION WHICH CONTAINS 3 GAL/CYD OF CALCIUM NITRITE CORROSION-INHIBITOR ADMIXTURE.
3. MAXIMUM WATER SOLUBLE CHLORIDE ION CONTENT FROM ALL CONCRETE CONSTITUENTS SHALL NOT EXCEED 0.06% OF WEIGHT OF CEMENT FOR ALL PRESTRESSED CONCRETE ELEMENTS, 0.15% OF WEIGHT OF CONCRETE FOR CAST-IN-PLACE TOPPINGS, WASHES & POUR STRIPS AND 0.30% FOR ALL OTHER CONCRETE ELEMENTS.

LOAD BEARING PRECAST CONCRETE WALL PANELS

LOAD BEARING PRECAST WALL PANELS ARE USED TO SUPPORT GRAVITY AND LATERAL LOADS. PRECAST PANELS ARE TO BE DESIGNED FOR THE REACTIONS AND LOAD INFORMATION INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE GOVERNING BUILDING CODE.

SHORING/RE-SHORING

THE SHORING AND/OR RE-SHORING DESIGN FOR CONCRETE FRAME SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY SHORING FOR SLABS, BEAMS, AND GIRDERS SHALL BE ADEQUATE TO CARRY THE TOTAL WEIGHT OF THE SLAB-BEAM-GIRDER SYSTEM AND ANY TEMPORARY CONSTRUCTION LOADS TO BE IMPOSED ON THE STRUCTURAL SYSTEM. SHORING FOR A LEVEL SHALL NOT BE REMOVED UNTIL THE CONCRETE AT THAT LEVEL HAS ATTAINED THE SPECIFIED COMPRESSIVE STRENGTH (F'C). REMOVAL OF SHORING AND/OR RESHORING SHALL NOT CAUSE OVERSTRESSING OF ANY STRUCTURAL ELEMENTS.

CONCRETE SLABS ON GRADE

SLABS ON GRADE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION (ACI 302.1R).

PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL THE CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE.

PROVIDE CURING OF CONCRETE SLABS IMMEDIATELY AFTER FINISHING USING A SPRAYED ON DISSIPATING-RESIN LIQUID CURING COMPOUND CONFORMING TO ASTM C309, UNLESS NOTED OTHERWISE. ALL SCUFFS OR ABRASIONS TO THE CURING MEMBRANE SHALL BE RECOATED DAILY. OTHER CURING METHODS MAY BE USED WITH APPROVAL BY THE STRUCTURAL ENGINEER.

UNLESS SHOWN OR NOTED OTHERWISE, PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS-ON-GRADE AT A MAXIMUM SPACING OF 36 TIMES THE SLAB THICKNESS. PROVIDE JOINTS AT ALL COLUMN LOCATIONS. LOCATE JOINTS TO ELIMINATE RE-ENTRANT CORNERS AND TO CREATE SQUARE OR RECTANGULAR SECTIONS WITH MAXIMUM LONG SIDE TO SHORT SIDE RATIO OF 1.5 TO 1.

CONTROL JOINTS IN SLABS ON GRADE SHALL NOT RECEIVE JOINT FILLER MATERIAL UNLESS NOTED OTHERWISE.

PREPARE SUBGRADE PER GEOTECH REPORT SECTIONS "4.2 EARTH WORK" & 4.4 FLOOR SLAB".PROVIDE A MINIMUM OF 5 FEET OF PROPERLY PLACED AND COMPACTED SELECT FILL MATERIAL BENEATH THE FLOOR SLAB.

REINFORCING STEEL

REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI.

REINFORCING BAR DETAILING, FABRICATING, AND PLACING SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING STANDARDS: ACI 301, ACI 315, ACI 318 AND ACI DETAILING MANUAL (SP66).

UNLESS A GREATER AMOUNT OF COVER IS INDICATED ON THE DRAWINGS, PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS:

DESCRIPTION	COVER
FOOTINGS	3"
BEAMS TOP REINFORCING	3"
BEAMS BOTTOM REINFORCING	2"
BEAM STIRRUPS AT SIDE AND BOTTOM	1-1/2"
BEAM STIRRUPS AT TOP	2-1/2"
COLUMNS MAIN REINFORCING	2-1/2"
COLUMN TIES	2"
SLAB TOP REINFORCING	2"
SLAB BOTTOM REINFORCING	1"
SLAB-ON-GRADE	2" FROM TOP
WALLS NOT IN CONTACT WITH EARTH	1-1/2"
WALLS IN CONTACT WITH EARTH	2"

REINFORCING STEEL SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR APPROVED BY THE STRUCTURAL ENGINEER.

WHERE LAP SPLICE LENGTHS ARE NOT SHOWN OR NOTED, PROVIDE A CLASS "B" LAP.

ALL 90 DEGREE AND 180 DEGREE BENDS SHOWN ON THE DRAWINGS SHALL BE STANDARD HOOKS, UNLESS NOTED OTHERWISE.

PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT CORNERS OF ALL WALLS AND GRADE BEAMS. LAP SPLICE CORNER BARS WITH STRAIGHT BARS.

UNLESS OTHERWISE SHOWN OR NOTED, PROVIDE 2-#5 BARS (ONE EACH FACE) AROUND UNFRAMED OPENINGS IN CONCRETE WALLS AND GRADE BEAMS. PLACE BARS PARALLEL TO THE SIDES OF THE OPENING AND EXTEND 24" BEYOND CORNERS.

WELDABLE REINFORCING STEEL

REINFORCING STEEL WHICH IS TO BE WELDED SHALL CONFORM TO ASTM A706. WELDING OF REINFORCING STEEL, WHEN APPROVED BY THE STRUCTURAL ENGINEER, SHALL CONFORM TO THE LATEST EDITION OF AMERICAN WELDING SOCIETY STANDARD D1.4. ELECTRODES FOR SHOP AND FIELD WELDING OF REINFORCING STEEL SHALL CONFORM TO ASTM A233, CLASS E90XX.

FIBER REINFORCEMENT

FIBER REINFORCEMENT SHALL BE 3/4" LONG, VIRGIN (NON-RECYCLED) NYLON OR POLYPROPYLENE FIBERS, INTRODUCED INTO THE CONCRETE MIX AT THE BATCH PLANT, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DOSAGE SHALL BE 1.5 POUNDS PER CUBIC YARD OF CONCRETE.

CONCRETE TESTING

MAKE ONE SET OF TEST CYLINDERS IN ACCORDANCE WITH ASTM C31 FOR EACH DAY'S POUR AND FOR EACH 100 CUBIC YARDS. EACH SET SHALL INCLUDE ONE SPECIMEN TESTED AT 7 DAYS, 2 SPECIMENS TESTED AT 28 DAYS AND ONE SPECIMEN RETAINED IN RESERVE TO BE TESTED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. SPARE CYLINDER MAY BE DISCARDED 90 DAYS AFTER CASTING UNLESS DIRECTED OTHERWISE BY THE STRUCTURAL ENGINEER. THIS SET OF TEST CYLINDERS SHALL BE PROTECTED AGAINST FREEZING.

WHEN THE AMBIENT TEMPERATURE IS EXPECTED TO FALL BELOW 40 DEGREES DURING THE COURSE OF A CONCRETE POUR OR SUBSEQUENT CURING PROCESS, AN ADDITIONAL SET OF CONCRETE TEST CYLINDERS SHALL BE MADE AND TESTED. THESE CYLINDERS SHALL BE STORED IMMEDIATELY ADJACENT TO, AND CURED UNDER THE SAME CONDITIONS AS THE BUILDING CONCRETE. SPECIAL CURING BOXES ARE NOT PERMITTED FOR THESE TEST CYLINDERS.

FORWARD COPIES OF TEST RESULTS TO THE ARCHITECT, STRUCTURAL ENGINEER, READY-MIX SUPPLIER, CONTRACTOR AND COR WITHIN 24 HOURS AFTER TESTING.

EXPANSION ANCHORS

EXPANSION ANCHORS SHALL BE CARBON STEEL ANCHORS AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR AN EQUIVALENT SUBSTITUTE APPROVED BY THE STRUCTURAL ENGINEER AND SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

EXPANSION ANCHORS SHALL NOT BE INSTALLED IN CONCRETE UNTIL IT HAS ATTAINED ITS SPECIFIED MINIMUM 28 DAY COMPRESSIVE STRENGTH.

ADHESIVE ANCHORS

ADHESIVE ANCHORS SHALL BE HILTI "HIT HY200" FOR SOLID SUBSTRATE AND HILTI "HIT HY70" FOR HOLLOW SUBSTRATE OR AN EQUIVALENT SUBSTITUTE APPROVED BY THE STRUCTURAL ENGINEER, UNLESS NOTED OTHERWISE ON PLANS. ANCHORS SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS BY INSTALLERS TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

MINIMUM EMBEDMENT DEPTH SHALL BE 8 BOLT DIAMETERS UNLESS NOTED OTHERWISE.

NON-SHRINK GROUT

GROUT SHALL BE A NON-METALLIC, SHRINKAGE RESISTANT (WHEN TESTED IN ACCORDANCE WITH THE LATEST EDITION OF ASTM C827 OR CRD-C621), PREMIXED, NON-CORROSIVE, NON-STAINING PRODUCT CONTAINING PORTLAND CEMENT, SILICA SANDS, SHRINKAGE COMPENSATING AGENTS AND FLUIDITY IMPROVING COMPOUNDS. GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'C) OF 5,000 PSI IN 28 DAYS.

WATERSTOPS

SELF-EXPANDING STRIP WATER STOPS SHALL BE VOLCLAY WATERSTOP-RX 101 UNLESS NOTED OTHERWISE. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

PVC WATERSTOPS

PROVIDE FACTORY MADE WATERSTOP FABRICATIONS FOR ALL CHANGES OF DIRECTION, INTERSECTIONS, AND TRANSITIONS LEAVING ONLY STRAIGHT BUTT JOINT SPLICES FOR THE FIELD.

PROVIDE HOG RINGS OR GROMMETS SPACED AT 12 INCHES ON CENTER ALONG LENGTH OF WATERSTOP.

PROVIDE TEFLON COATED THERMOSTATICALLY CONTROLLED WATERSTOP SPLICING IRONS FOR FIELD BUTT SPLICES.

FIELD BUTT SPLICES SHALL BE HEAT FUSED WELDED USING A TEFLON COATED THERMOSTATICALLY CONTROLLED WATERSTOP SPLICING IRON AT APPROXIMATELY 380 DEGREES F. FOLLOW APPROVED MANUFACTURER RECOMMENDATIONS.

LAPPING OF WATERSTOP, USE OF ADHESIVES, OR SOLVENTS SHALL NOT BE ALLOWED.

CENTER WATERSTOP IN JOINT AND SECURE WATERSTOP IN CORRECT POSITION USING HOG RINGS OR GROMMETS SPACED AT 12 INCHES ON CENTER ALONG THE LENGTH OF THE WATERSTOP AND WIRE TIE TO ADJACENT REINFORCING STEEL.

MASTIC COATING

MASTIC COATING FOR PROTECTION OF INDICATED ITEMS SHALL BE BITUMASTIC 50 COAL TAR MASTIC BY CARBOLINE OR EQUIVALENT SUBSTITUTE APPROVED BY THE STRUCTURAL ENGINEER. INSTALL AT LOCATIONS INDICATED ON DRAWINGS.

UNLESS NOTED OTHERWISE, APPLY MASTIC TO A COATING THICKNESS OF 18 MILS. PROVIDE FULL COVERAGE OVER ITEMS INDICATED TO RECEIVE COATING.

STRUCTURAL STEEL

STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE ANSI/AISC 360 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST EDITION WITH AMENDMENTS, AND THE AISC 303 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, LATEST EDITION WITH AMENDMENTS.

STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, 50 KSI.

STRUCTURAL STEEL PLATES AND ROLLED SHAPES OTHER THAN WIDE-FLANGE SHAPES SHALL CONFORM TO ASTM A36, UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE B.

STRUCTURAL PIPE SHALL CONFORM TO ASTM A53, GRADE B.

ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE.

STEEL STUDS SHALL CONFORM TO ASTM A108.

BOLTED CONNECTIONS SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION. BOLTED CONNECTIONS FOR STRUCTURAL STEEL MEMBERS SHALL BE MADE WITH 3/4" DIAMETER A325 BOLTS, UNLESS NOTED OTHERWISE. BOLTED CONNECTIONS SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITION, EXCEPT BOLTED CONNECTIONS IN BRACE ELEMENTS ARE TO BE FULLY PRETENSIONED WITH CLASS A FAYING SURFACES.

WELDING PROCEDURES SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY'S STRUCTURAL WELDING CODE FOR STEEL ANSI/AWS D1.1.

WELDED CONNECTIONS USING ASTM A992 STEEL AS A BASE METAL SHALL BE MADE WITH E70XX LOW HYDROGEN ELECTRODES. UNLESS OTHERWISE SHOWN OR NOTED ON THE DRAWINGS, OTHER WELDED CONNECTIONS MAY BE MADE WITH STANDARD E70XX ELECTRODES.

STRUCTURAL STEEL THAT RECEIVES FINISH PAINT SHALL BE SHOP-PRIMED WITH A RUST-INHIBITING PRIMER, UNLESS NOTED OTHERWISE ON THE DRAWINGS. CONTRACTOR SHALL VERIFY PRIMER IS COMPATIBLE WITH FINISH COAT SYSTEM SPECIFIED BY THE ARCHITECT. COORDINATE FINISH PAINTING REQUIREMENTS WITH THE ARCHITECT.

STRUCTURAL STEEL THAT IS NOT EXPOSED IN THE FINISHED CONSTRUCTION AND DOES NOT RECEIVE FINISH PAINT SHALL NOT BE SHOP-PRIMED, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

STRUCTURAL STEEL NOTED TO BE GALVANIZED SHALL BE HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A123.

DO NOT PAINT OR GALVANIZE THE FOLLOWING SURFACES:
1. SURFACES TO BE WELDED.
2. SURFACES TO RECEIVE BOLTED SLIP-CRITICAL CONNECTIONS.
3. SURFACES TO RECEIVE SHEAR STUD CONNECTIONS.
4. SURFACES TO RECEIVE SPRAYED-ON FIREPROOFING.

ALL ABRASIONS TO GALVANIZED SURFACES OR SURFACES TO RECEIVE AN ARCHITECTURAL FINISH COAT SHALL BE TOUCHED-UP AFTER ERECTION IS COMPLETE. FOR PAINTED STEEL, USE A PRIMER EQUIVALENT TO THE SHOP PAINT. FOR GALVANIZED STEEL, USE A ZINC-RICH COLD-GALVANIZING PAINT.

DESIGN CONNECTIONS NOT SHOWN IN ACCORDANCE WITH THE ASD SPECIFICATION AND MANUAL OF STEEL CONSTRUCTION. UNLESS NOTED OTHERWISE ON THE DRAWINGS, DESIGN BEAM CONNECTIONS NOT SHOWN, TO SUPPORT A MINIMUM OF A 10 KIP SHEAR REACTION. PROVIDE NO LESS THAN 2 BOLTS IN ANY SINGLE LINE OF BOLTS, UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

PROVIDE L4X4X1/4 FRAMED OPENINGS FOR ALL ROOF PENETRATIONS 12 INCHES OR LARGER ALONG ANY SIDE, UNLESS LARGER FRAMING IS INDICATED. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR PENETRATIONS. COORDINATE FRAMED OPENING SIZES AND LOCATIONS WITH THE MECHANICAL AND PLUMBING CONTRACTORS.

GALVANIZE ALL EXPOSED STEEL.

GLASS CURTAIN WALLS

SUPPLIER OF GLASS CURTAIN WALL IS RESPONSIBLE FOR THE DESIGN, DETAILING AND INSTALLATION OF THE CURTAIN WALL SYSTEM.

STEEL REQUIRED TO TRANSMIT THE GRAVITY AND/OR LATERAL LOADS TO THE STRUCTURE NOT DETAILED ON THE STRUCTURAL DRAWINGS IS THE RESPONSIBILITY OF THE CURTAIN WALL SUPPLIER TO DESIGN, DETAIL AND INSTALL.

CONNECTIONS TO TRANSMIT LATERAL LOADS TO THE STRUCTURE SHALL NOT BE MADE TO THE BOTTOM FLANGES OF BEAMS, BOTTOM CHORDS OF JOIST GIRDERS OR BOTTOM CHORDS OF JOISTS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

WHERE KNEE WALLS ARE PRESENT UNDER THE GLASS CURTAIN WALL SYSTEM THE VERTICAL MULLIONS SHALL NOT STOP AT THE TOP OF THE KNEE WALL BUT SHALL EXTEND DOWN TO THE STRUCTURE AND THE DESIGN SHALL NOT ASSUME THE KNEE WALL BRACES THE CURTAIN WALL.

ELEVATORS

CONTRACTOR SHALL COORDINATE ELEVATOR PITS, SHAFTS, SLAB OPENINGS, FRAMING LOCATIONS, GUIDE RAIL SUPPORTS, DIVIDER BEAMS, HOIST BEAMS AND SUMP PITS WITH ELEVATOR SUPPLIER PRIOR TO CONSTRUCTION AS REQUIRED FOR PROPER INSTALLATION AND OPERATION.

COORDINATE ANY REQUIRED STRUCTURAL MODIFICATIONS WITH THE STRUCTURAL ENGINEER PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY STRUCTURAL ELEMENTS.

THE ELEVATOR HOIST BEAMS HAVE BEEN DESIGNED FOR A 10 KIP LOAD. CONTACT ENGINEER IF SELECTED ELEVATOR HAS A HOIST LOAD GREATER THAN 10 KIP.

Revisions: | Date

VA | U.S. Department of Veterans Affairs

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100% CONSTRUCTION DOCUMENTS

Drawing Title: GENERAL NOTES	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037 Building Number: 123	OFFICE OF FACILITIES MANAGEMENT
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT	Drawing Number: SI002	VA Project Number: 580-321 VA U.S. Department of Veterans Affairs

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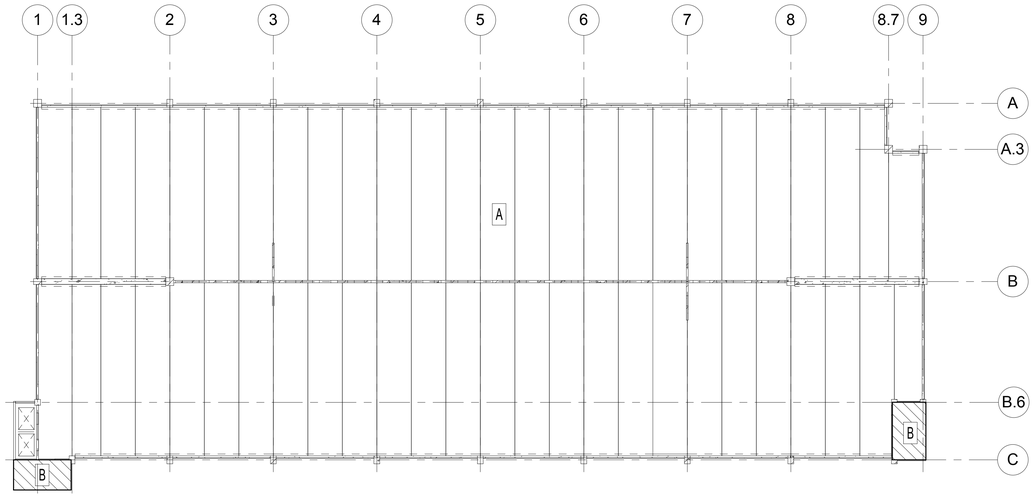
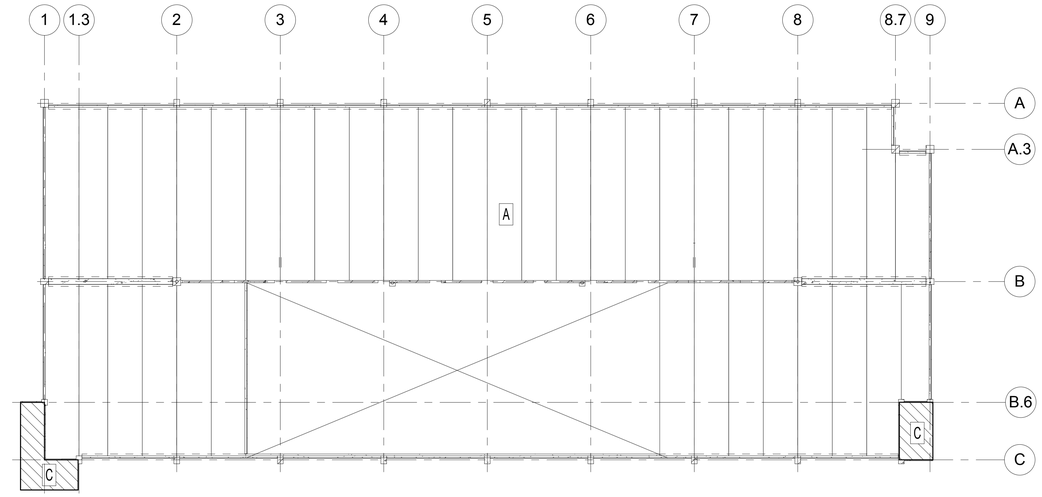
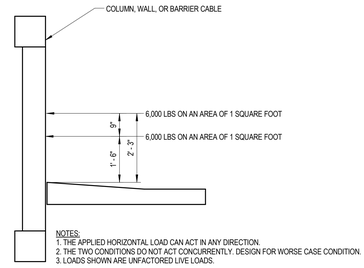


1 S003 **TYP FLOOR LOAD MAP**
SCALE: 3/64" = 1'-0"



2 S003 **ROOF LOAD MAP**
SCALE: 3/64" = 1'-0"



NOTES:
1. THE APPLIED HORIZONTAL LOAD CAN ACT IN ANY DIRECTION.
2. THE TWO CONDITIONS DO NOT ACT CONCURRENTLY. DESIGN FOR WORSE CASE CONDITION.
3. LOADS SHOWN ARE UNFACTORED LIVE LOADS.

1 S003 **TYPICAL VEHICLE BARRIER LOADING DIAGRAM**
NO SCALE

DESIGN DATA

THE BUILDING STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE.

SEE LOAD MAPS FOR FLOOR LOADING CRITERIA.

SNOW LOAD DESIGN DATA

1. GROUND SNOW LOAD (PG) = 0 PSF
2. LOW-SLOPE ROOF SNOW LOAD (PF) = 0 PSF
3. SNOW EXPOSURE FACTOR (CE) = 1.0
4. THERMAL FACTOR (CT) = 1.2
5. SNOW LOAD IMPORTANCE FACTOR (IS) = 1.0

WIND LOAD DESIGN DATA

1. BASIC WIND SPEED (3-SECOND GUST) = 135 MPH
2. WIND LOAD IMPORTANCE FACTOR (IW) = 1.0
3. WIND EXPOSURE = B
4. WIND DESIGN PRESSURE (P) = VARIES WITH HEIGHT AND LOCATION

EARTHQUAKE DESIGN DATA

1. SHORT PERIOD MAPPED, 5 PERCENT DAMPED, SPECTRAL RESPONSE ACCELERATION (SS) = 0.087
2. 1-SECOND MAPPED, 5 PERCENT DAMPED, SPECTRAL RESPONSE ACCELERATION (S1) = 0.036
3. SEISMIC IMPORTANCE FACTOR (IE) = 1.0
4. OCCUPANCY CATEGORY = II
5. SEISMIC DESIGN CATEGORY = A
6. SITE CLASSIFICATION = D
7. DESIGN, 5 PERCENT DAMPED, SHORT PERIOD SPECTRAL RESPONSE COEFFICIENT (SDS) = 0.094
8. DESIGN, 5 PERCENT DAMPED, 1-SECOND SPECTRAL RESPONSE COEFFICIENT (SD1) = 0.058
9. BASIC STRUCTURAL SYSTEM / SEISMIC RESISTING SYSTEM: A-9 - ORDINARY PRECAST CONCRETE SHEAR WALLS
10. ANALYSIS PROCEDURE UTILIZED = EQUIVALENT LATERAL FORCE PROCEDURE
11. RESPONSE MODIFICATION COEFFICIENT (R) = 3.0
12. SEISMIC RESPONSE COEFFICIENT (CS) = 0.01

FLOOR LOAD SCHEDULE

MARK	OCCUPANCY/USE	SDL		SDL		LL	SL
		DEAD LOAD (PSF)	DESCRIPTION	POINT LOAD (LBS)	DESCRIPTION	LIVE LOAD (PSF)	SNOW LOAD (PSF)
A	TYP FLOOR	5	NOTE 1	-	-	40 (NR)	0
B	STAIRS	5	NOTE 1	-	-	100 (NR)	0
C	ROOF	20	NOTE 1	-	-	20	0

NOTES:
1. SDL INDICATES SUPERIMPOSED DEAD LOAD AND IS DL IN ADDITION TO THE SELF-WEIGHT OF THE PRIMARY STRUCTURAL SYSTEM.
2. (NR) INDICATES NON-REDUCIBLE LIVE LOAD.

FOUNDATION REACTION TABLE

GRID LOCATION	SERVICE LEVEL AXIAL LOAD			GRID LOCATION	SERVICE LEVEL AXIAL LOAD		
	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (KIPS)		DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (KIPS)
A-1	395	90	485	B-9	575	150	725
A-2	495	155	650	B.6-1 *	100	5	105
A-3	440	135	575	B.6-8.8 *	110	45	155
A-4	440	135	575	B.6-9 *	150	45	195
A-5	440	135	575	C-1.3 *	255	90	345
A-6	440	135	575	C-2	435	130	565
A-7	440	135	575	C-3	365	100	465
A-8	425	130	555	C-4	300	90	390
A-8.7	265	65	330	C-5	300	90	390
A.3-8.7	120	20	140	C-6	305	90	395
A.3-9	165	20	185	C-7	330	95	425
B-1	650	175	825	C-8	440	135	575
B-2	530	180	710	C-8.8 *	255	75	330
B-8	525	180	705				

NOTE: * INDICATES THAT THE COLUMN IS ABOVE MAT BASE

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100% CONSTRUCTION DOCUMENTS

Drawing Title: LOAD MAP	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Building Number: 123	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT	Drawing Number: SI003	VA | U.S. Department of Veterans Affairs

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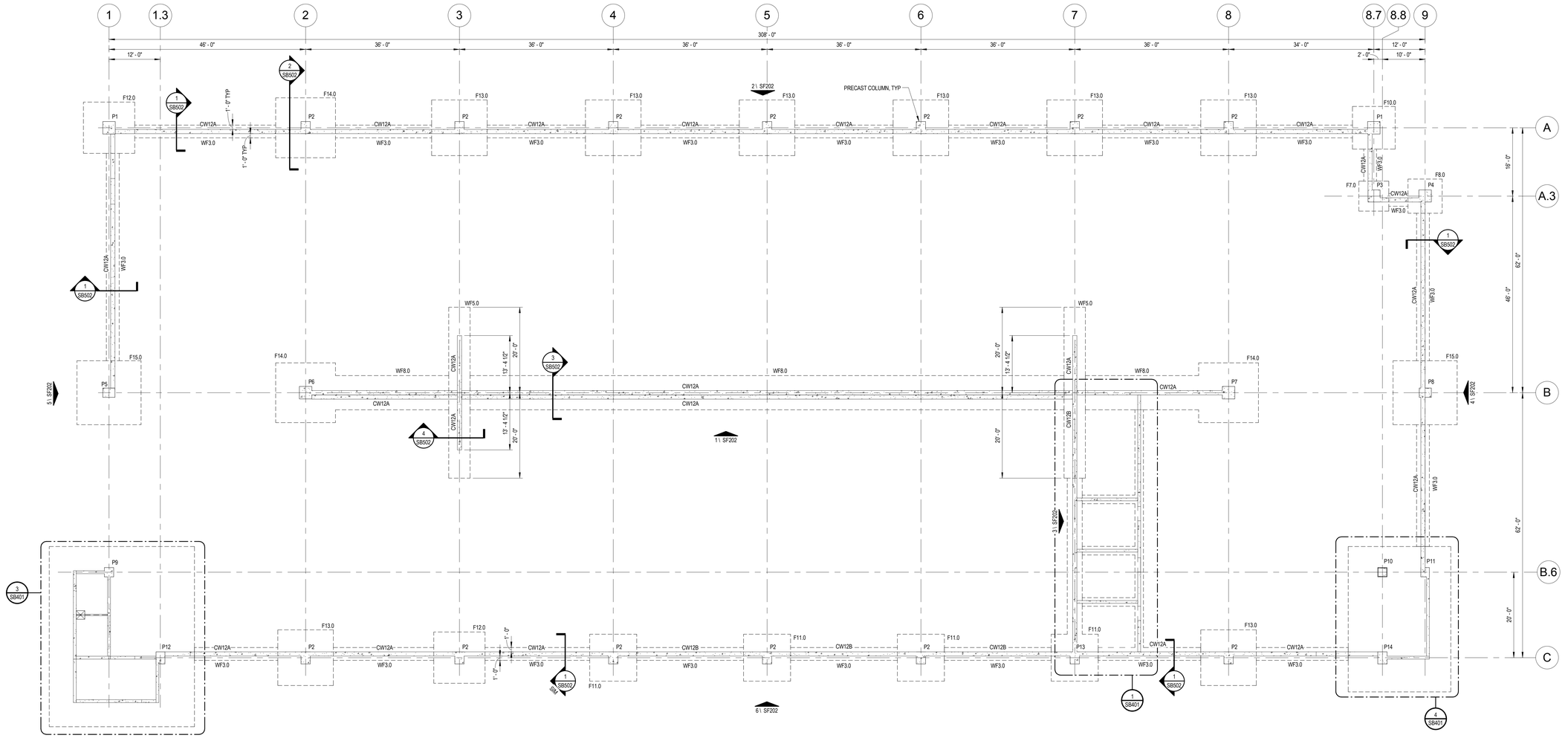

FOUNDATION PLAN

1 / SB101 SCALE: 3/32" = 1'-0"

NOTES:

1. FINISH FLOOR ELEVATION VARIES. REFERENCE FINISH FLOOR ELEVATION (FIN FLR) = 100'-0". ELEVATION 100'-0" = USGS (41.50).
2. TOP OF FOOTING ELEVATION = 95'-6" UNO
3. TOP OF PIER ELEVATION = 99'-4" UNO
4. SEE SLAB ON GRADE PLAN FOR TOP OF CONCRETE WALL ELEVATIONS (FOUNDATION WALLS)
5. SEE SI001 FOR ABBREVIATIONS, SYMBOLS & LEGENDS
6. SEE SI002 FOR GENERAL STRUCTURAL NOTES
7. SEE SI003 FOR STRUCTURAL DESIGN LOAD INFORMATION
8. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR OPENINGS, STAIRS, DOWNSPOUTS RECESSES, ETC.
9. SEE PLUMBING DRAWINGS FOR LOCATION OF DOWNSPOUTS AND UNDERSLAB STORM PIPES.
10. PROVIDE A 1" GAP BETWEEN ALL CAST-IN-PLACE FOUNDATION WALLS AND PRECAST COLUMNS, UNLESS NOTED OTHERWISE.
11. SEE A/W SHEETS FOR WATERPROOFING AND JOINT DETAILS
12. FOUNDATIONS HAVE BEEN DESIGNED TO INCLUDE 5 PSF FOR A FUTURE SOLAR PANEL SYSTEM AT THE TOP LEVEL. DESIGN ALL PRECAST COLUMNS AND BEARING WALLS TO SUPPORT THIS FUTURE LOAD
13. SEE SHEET S8601 FOR PIER DETAILS
14. PROVIDE WALL BRACING UNTIL ALL SLABS ON GRADE ARE IN PLACE FOR WALLS ALONG GRID C BETWEEN GRIDS 2 AND 7 AND ALONG GRID 7.

Revisions:	Date

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100% CONSTRUCTION DOCUMENTS

Drawing Title: FOUNDATION PLAN	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SB101	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs

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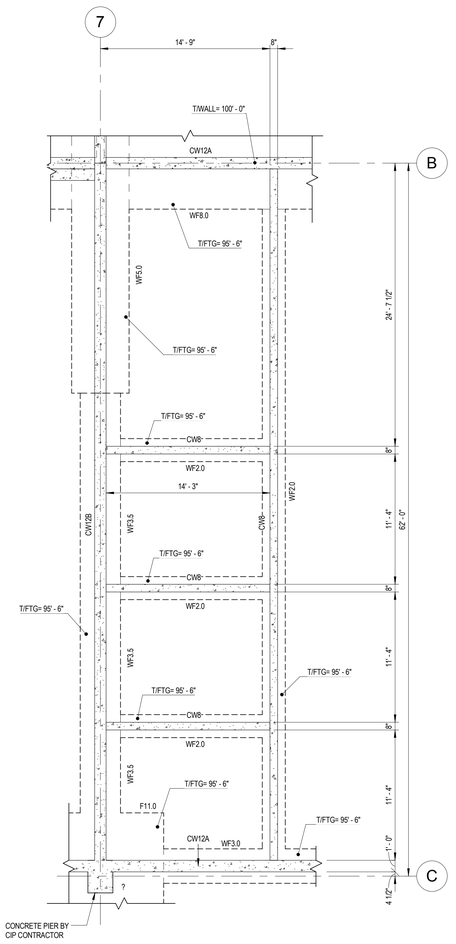
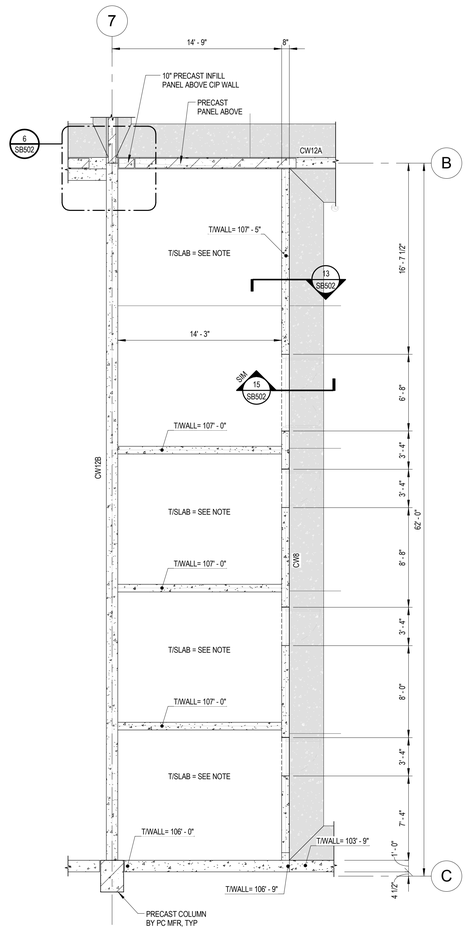
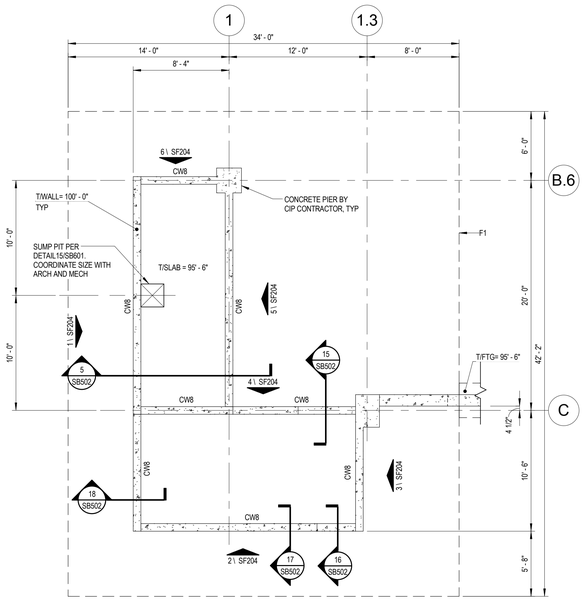


1 / S8401 STORAGE AREA PLAN @ FOUNDATION LEVEL
SCALE: 3/16" = 1'-0"

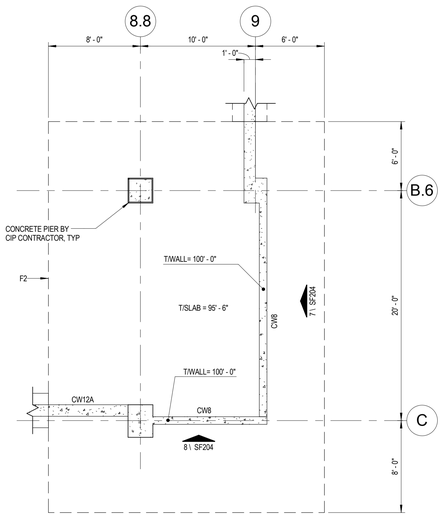


2 / S8401 STORAGE AREA PLAN @ SLAB-ON-GRADE LEVEL
SCALE: 3/16" = 1'-0"

NOTE: TOP OF FLOOR SLAB ELEVATION TO MATCH THE TOP OF WASH ELEVATION OUTSIDE THE DOORS.



3 / S8401 FOUNDATION PLAN @ ELEVATOR TOWER
SCALE: 3/16" = 1'-0"



4 / S8401 FOUNDATION PLAN @ NORTH STAIR
SCALE: 3/16" = 1'-0"

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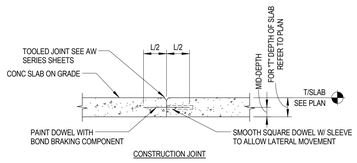
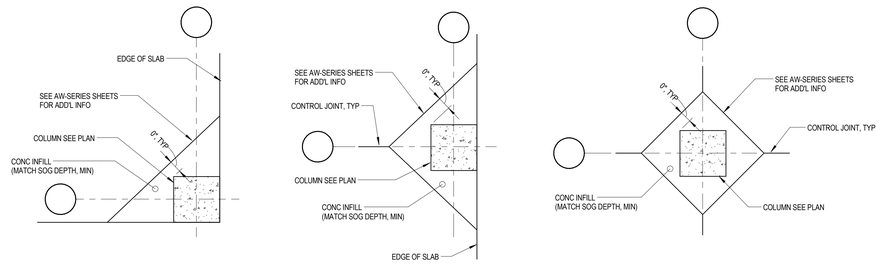
100% CONSTRUCTION DOCUMENTS

Drawing Title: ENLARGED FOUNDATION PLANS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SB401	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		U.S. Department of Veterans Affairs

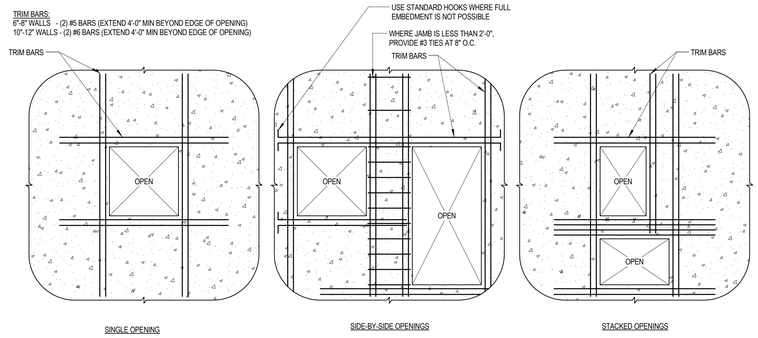


DOWEL SIZE AND SPACING			
SLAB DEPTH	DOWEL DIAMETER	TOTAL DOWEL LENGTH	DOWEL SPACING CENTER TO CENTER
IN	IN	IN	IN
4	3/4	16	24
5-6	3/4	16	12
7-8	1	18	12
9-11	1 1/4	18	12

1 SB501 **TYPICAL SLAB ON GRADE JOINTS**
SCALE: 3/4" = 1'-0"

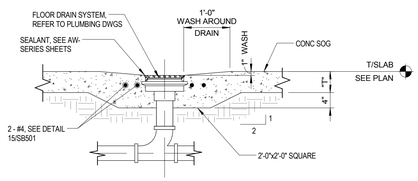


5 SB501 **TYPICAL COLUMN ISOLATION JOINT DETAIL**
SCALE: 1" = 1'-0"

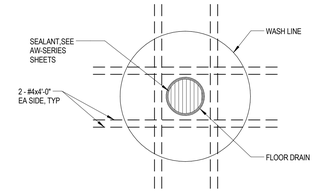


NOTE: WHERE MISCELLANEOUS OPENING WIDTH IS GREATER THAN 3'-0" WIDE, CONTACT STRUCTURAL ENGINEER.

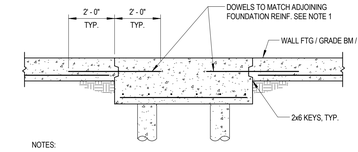
9 SB501 **TYPICAL REINFORCING FOR MISCELLANEOUS OPENINGS LESS THAN 3'-0" IN CONCRETE WALLS**
SCALE: 3/4" = 1'-0"



12 SB501 **FLOOR DRAIN DETAIL**
SCALE: 3/4" = 1'-0"

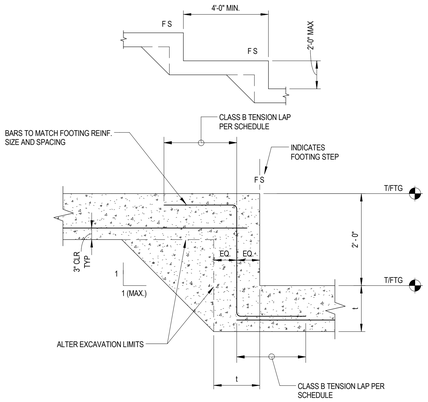


13 SB501 **FLOOR DRAIN DETAIL**
SCALE: 3/4" = 1'-0"

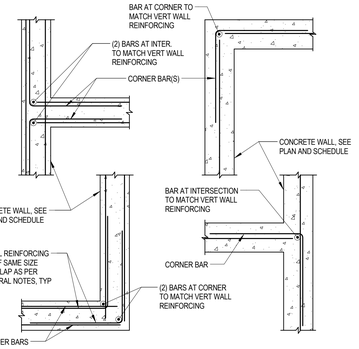


NOTES:
1. AT CONTRACTOR OPTION, DRILL AND EPOXY WITH 8" MIN. EMBEDMENT. UNO

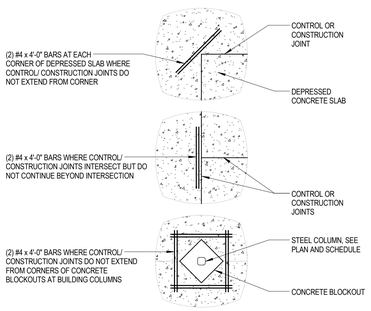
2 SB501 **TYPICAL FOUNDATION INTERSECTION**
SCALE: 3/8" = 1'-0"



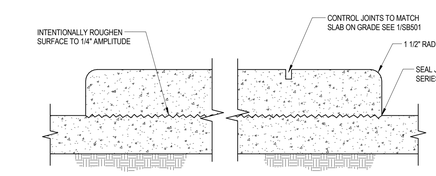
6 SB501 **TYPICAL STEPPED FOOTING**
SCALE: 3/4" = 1'-0"



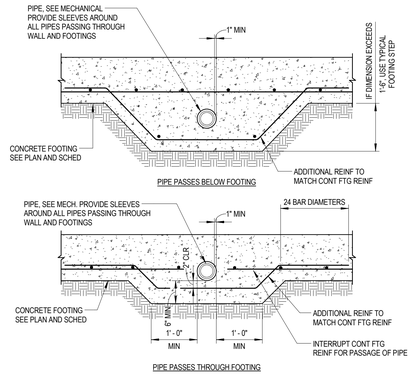
10 SB501 **TYPICAL CORNER WALL REINFORCING AT CONCRETE WALLS**
SCALE: 3/4" = 1'-0"



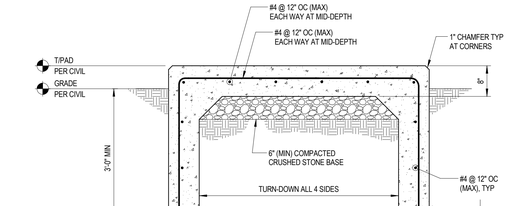
14 SB501 **LOCATIONS REQUIRING ADDITIONAL SLAB REINFORCING**
SCALE: 3/4" = 1'-0"



3 SB501 **TYPICAL ISLAND DETAIL**
SCALE: 1 1/2" = 1'-0"

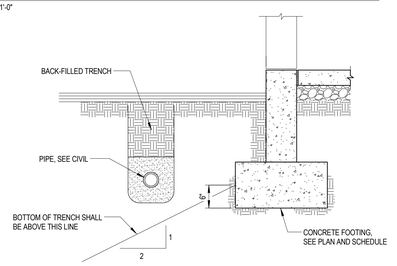


7 SB501 **CONDITIONS AT PIPE PERPENDICULAR TO FOOTING**
SCALE: 3/4" = 1'-0"

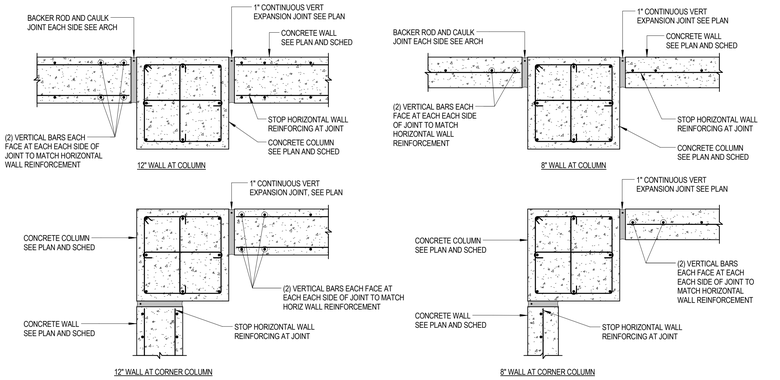


NOTES:
1. CONCRETE 28-DAY COMPRESSIVE STRENGTH = 4000 PSI, MINIMUM.
   AIR ENTRAINMENT =6% +/- 1%
   MAX.W/C RATIO = 0.45
   BROOM FINISH SURFACE
2. PROVIDE SAW-CUT CONTROL JOINTS SPACED NOT MORE THAN 24 TIMES THE SLAB THICKNESS
   CENTER-TO-CENTER, UNO. SEAL JOINTS WITH WEATHER-RESISTANT SEALANT.
3. SEE PLANS FOR OVERALL PAD DIMENSIONS.
4. COORDINATE EXACT LOCATION WITH CIVIL AND MECHANICAL DRAWINGS, AND EQUIPMENT SUPPLIER.

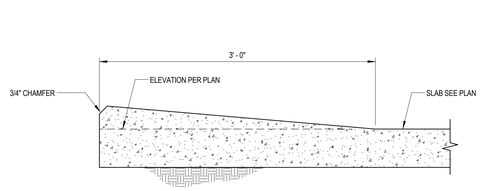
4 SB501 **EXTERIOR EQUIPMENT PAD DETAIL**
SCALE: 3/4" = 1'-0"



8 SB501 **CONDITION AT PIPE PARALLEL TO CONCRETE FOOTING**
SCALE: 3/4" = 1'-0"

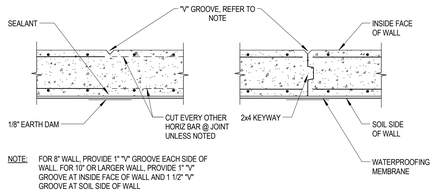


11 SB501 **TYPICAL EXPANSION JOINT BETWEEN CONCRETE WALL AND CONCRETE COLUMN DETAIL**
SCALE: 3/4" = 1'-0"



NOTE:
1) T/SOG ELEVATIONS ON PLANS DO NOT INCLUDE WASH CONCRETE.

15 SB501 **TYPICAL (SOG) WASH DETAIL**
SCALE: 1 1/2" = 1'-0"



NOTE: FOR 8" WALL, PROVIDE 1" "V" GROOVE EACH SIDE OF WALL. FOR 10" OR LARGER WALL, PROVIDE 1" "V" GROOVE AT INSIDE FACE OF WALL AND 1 1/2" "V" GROOVE AT SOIL SIDE OF WALL

16 SB501 **CONCRETE WALL DETAIL**
SCALE: 3/4" = 1'-0"

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Revisions:	Date

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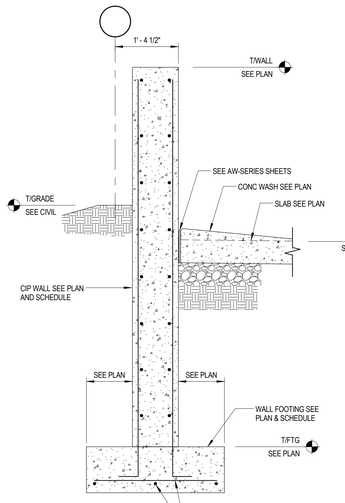
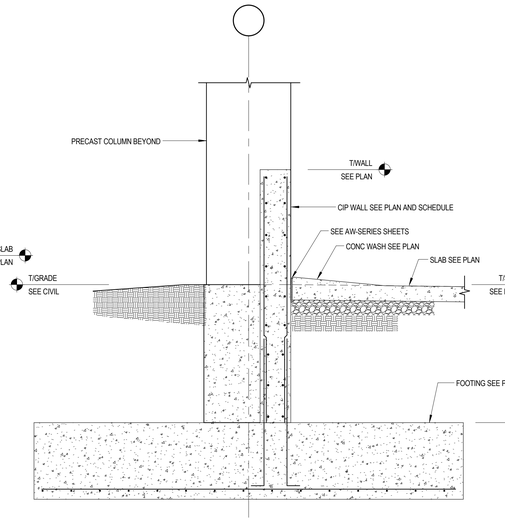
100% CONSTRUCTION DOCUMENTS

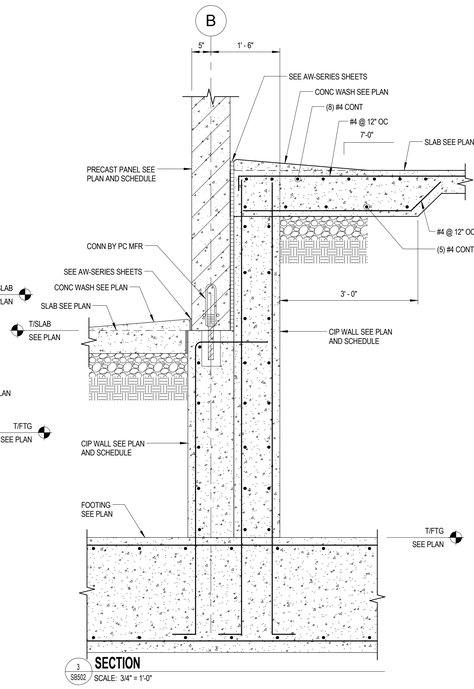
Drawing Title: TYPICAL FOUNDATION DETAILS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SB501	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT		VA | U.S. Department of Veterans Affairs



1 SB502 **SECTION**
SCALE: 3/4" = 1'-0"



2 SB502 **SECTION**
SCALE: 1/2" = 1'-0"



3 SB502 **SECTION**
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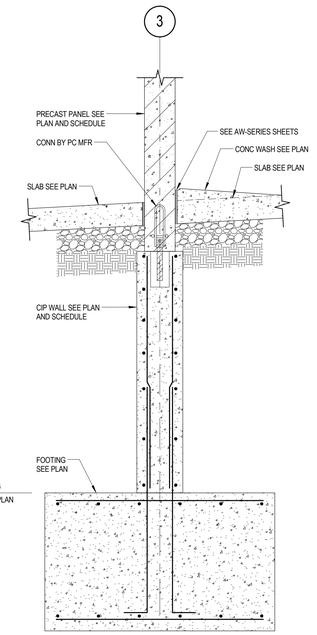

4 SB502 **SECTION**
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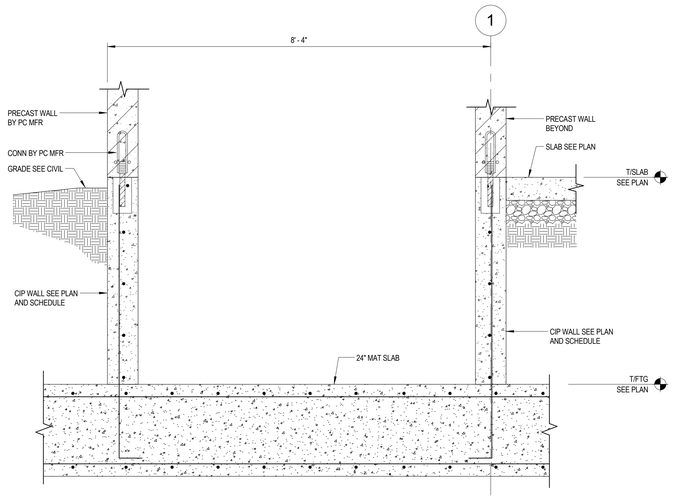

5 SB502 **SECTION**
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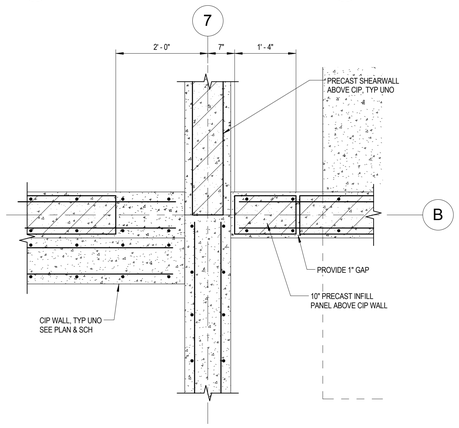
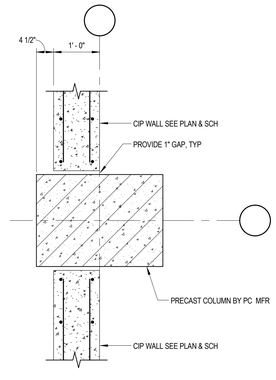
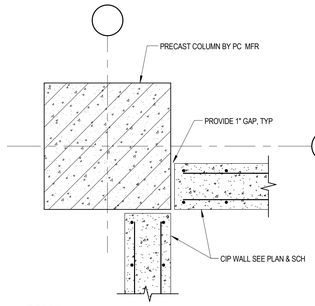


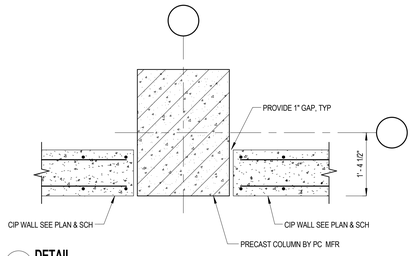
6 SB502 **DETAIL**
SCALE: 3/4" = 1'-0"



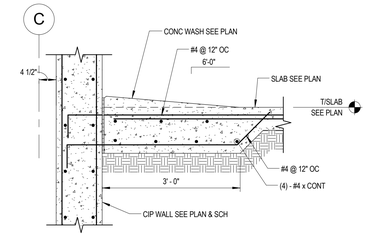
7 SB502 **DETAIL**
SCALE: 3/4" = 1'-0"



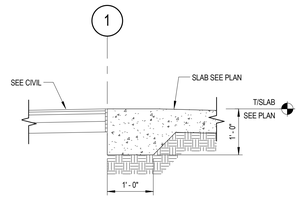
8 SB502 **DETAIL**
SCALE: 3/4" = 1'-0"



9 SB502 **DETAIL**
SCALE: 3/4" = 1'-0"



10 SB502 **SOG @ WALL**
SCALE: 3/4" = 1'-0"



11 SB502 **SECTION**
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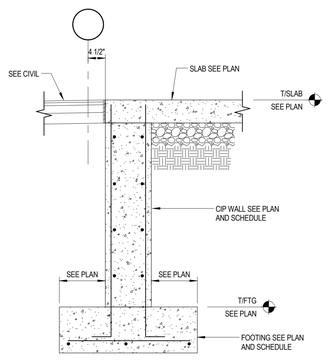

12 SB502 **SECTION**
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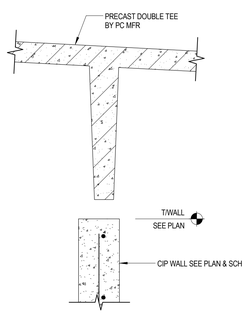

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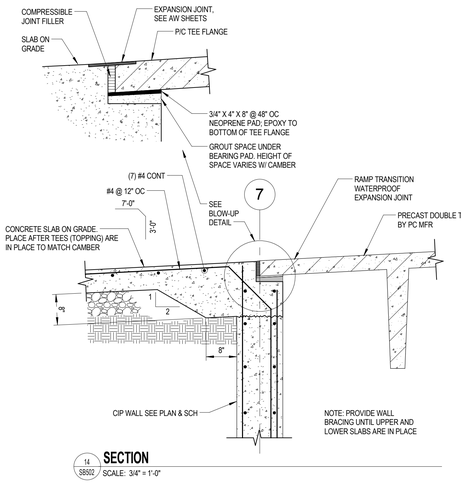

14 SB502 **SECTION**
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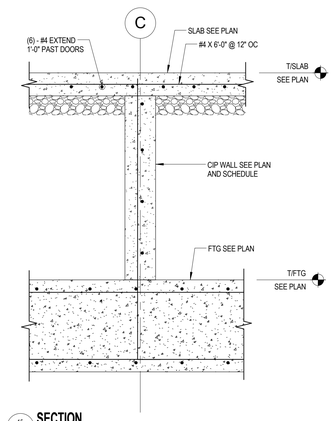
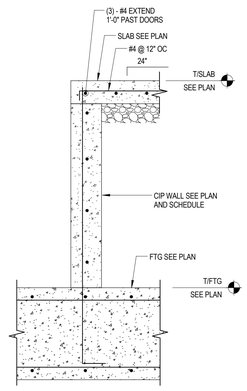
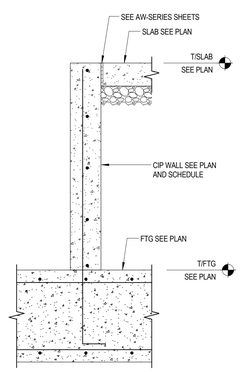


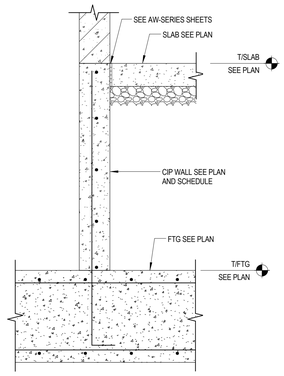
15 SB502 **SECTION**
SCALE: 3/4" = 1'-0"



16 SB502 **SECTION**
SCALE: 3/4" = 1'-0"



17 SB502 **SECTION**
SCALE: 3/4" = 1'-0"



18 SB502 **SECTION**
SCALE: 3/4" = 1'-0"

Revisions:	Date

U.S. Department of Veterans Affairs

Michael E. DeBakey VAMC
2002 Holcombe BLVD, Houston TX 77030

MARK A. VANDEMOER
REGISTERED
NO. 10809552
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100% CONSTRUCTION DOCUMENTS

Drawing Title: FOUNDATION SECTIONS AND DETAILS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SB502	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT		

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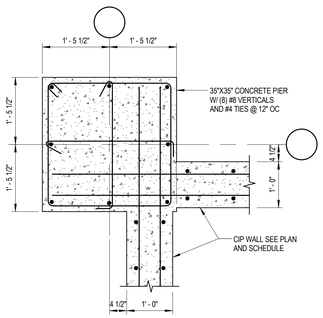
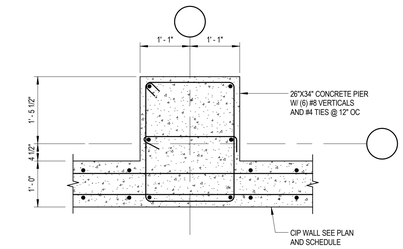
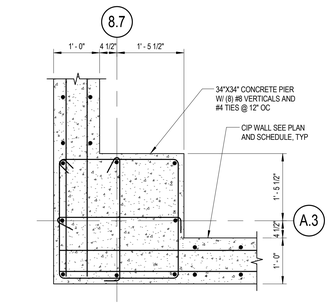


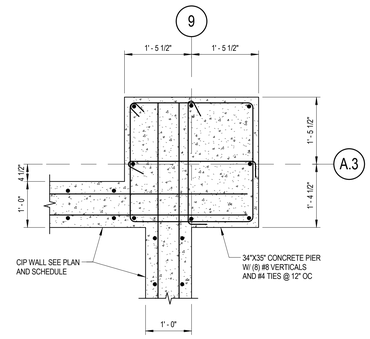
1 SB601 **PIER DETAIL P1**
SCALE: 3/4" = 1'-0"



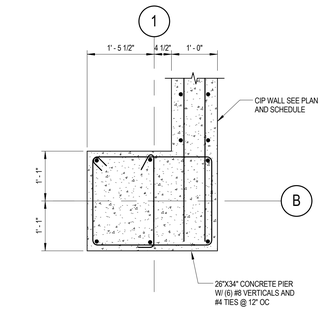
2 SB601 **PIER DETAIL P2**
SCALE: 3/4" = 1'-0"



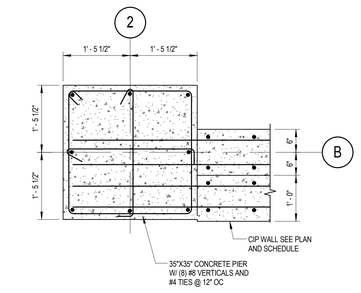
3 SB601 **PIER DETAIL P3**
SCALE: 3/4" = 1'-0"



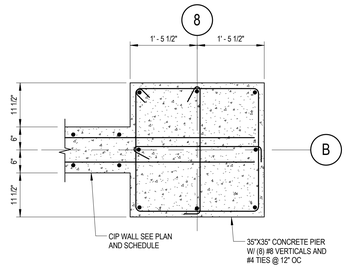
4 SB601 **PIER DETAIL P4**
SCALE: 3/4" = 1'-0"



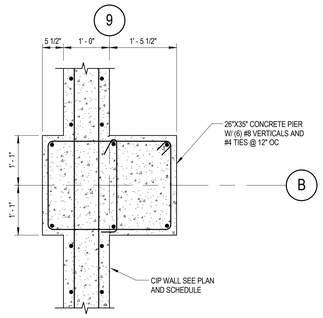
5 SB601 **PIER DETAIL P5**
SCALE: 3/4" = 1'-0"



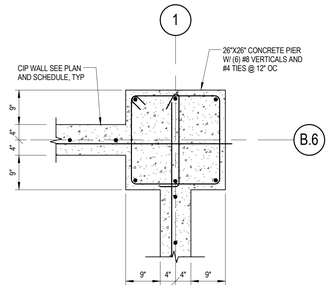
6 SB601 **PIER DETAIL P6**
SCALE: 3/4" = 1'-0"



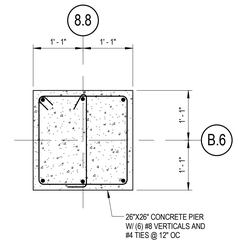
7 SB601 **PIER DETAIL P7**
SCALE: 3/4" = 1'-0"



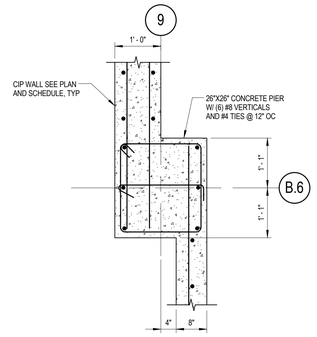
8 SB601 **PIER DETAIL P8**
SCALE: 3/4" = 1'-0"



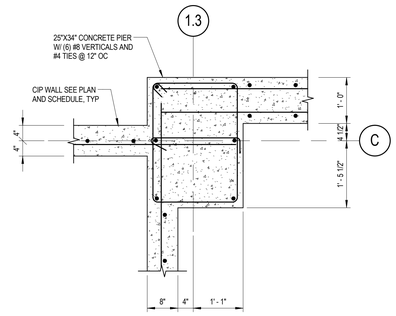
9 SB601 **PIER DETAIL P9**
SCALE: 3/4" = 1'-0"



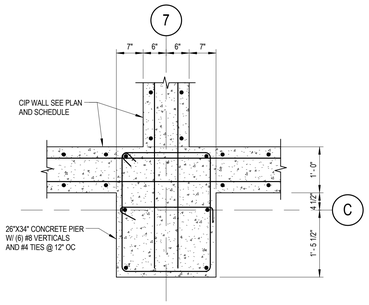
10 SB601 **PIER DETAIL P10**
SCALE: 3/4" = 1'-0"



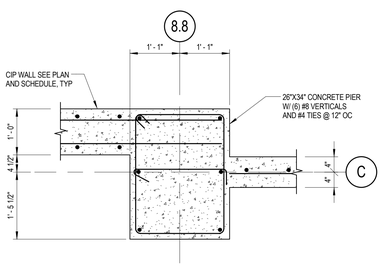
11 SB601 **PIER DETAIL P11**
SCALE: 3/4" = 1'-0"



12 SB601 **PIER DETAIL P12**
SCALE: 3/4" = 1'-0"

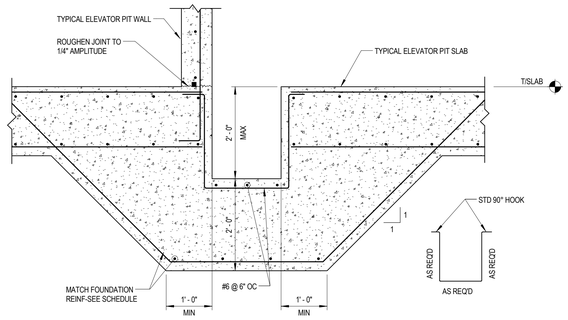


13 SB601 **PIER DETAIL P13**
SCALE: 3/4" = 1'-0"



14 SB601 **PIER DETAIL P14**
SCALE: 3/4" = 1'-0"

NOTE:
COORDINATE SUMP PIT WIDTH, W, AND SUMP PIT DEPTH, D, WITH PLUMBING CONTRACTOR PRIOR TO REBAR FABRICATION. DETAIL SHOWN IS VALID FOR MAX W=24" AND MAX D=24". FOR LARGER PITS CONTACT STRUCTURAL ENGINEER.



15 SB601 **TYPICAL SUMP PIT AT ELEVATOR PIT**
SCALE: 3/4" = 1'-0"

CONCRETE WALL SCHEDULE

MARK	WALL THICKNESS	HORIZONTAL REINF		VERTICAL REINF		REMARKS
		INSIDE FACE	OUTSIDE FACE	INSIDE FACE	OUTSIDE FACE	
CW8	8"	#5 @ 12" OC	-	#5 @ 12" OC	-	CENTER REINFORCING IN WALL
CW12A	1' - 0"	#5 @ 12" OC	#5 @ 12" OC	#5 @ 12" OC	#5 @ 12" OC	PROVIDE #3 WALL TIES @ 48" OC IN EACH DIRECTION
CW12B	1' - 0"	#5 @ 12" OC	#5 @ 12" OC	#7 @ 10"OC	#7 @ 10" OC	PROVIDE #3 WALL TIES @ 48" OC IN EACH DIRECTION

SPREAD FOOTING SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	FOOTING REINFORCEMENT		REMARKS
				TOP	BOTTOM	
F1	42" - 2"	34' - 0"	2' - 0"	#8 @ 9" OC, EW	#8 @ 9" OC, EW	
F2	34' - 0"	24' - 0"	2' - 0"	#7 @ 9" OC, EW	#7 @ 9" OC, EW	
F7.0	7' - 0"	7' - 0"	1' - 6"	-	(8) #6 EW	
F8.0	8' - 0"	8' - 0"	1' - 6"	-	(6) #9 EW	
F10.0	10' - 0"	10' - 0"	1' - 6"	-	(7) #8 EW	
F11.0	11' - 0"	11' - 0"	2' - 0"	-	(9) #9 EW	
F12.0	12' - 0"	12' - 0"	2' - 0"	-	(10) #8 EW	
F13.0	13' - 0"	13' - 0"	2' - 0"	-	(11) #9 EW	
F14.0	14' - 0"	14' - 0"	2' - 6"	-	(11) #9 EW	
F15.0	15' - 0"	15' - 0"	2' - 6"	-	(14) #9 EW	

WALL FOOTING SCHEDULE

MARK	FTG SIZE (W x D)	LONGITUDINAL REINFORCEMENT		TRANSVERSE REINFORCEMENT		REMARKS
		TOP	BOTTOM	TOP	BOTTOM	
WF2.0	2'-0" X 1'-0"	-	(3) - #5	-	#3 @ 48"	
WF3.0	3'-0" X 1'-0"	(3) - #5	(3) - #5	#5 @ 12"	#5 @ 12"	
WF3.5	3'-6" X 2'-0"	(3) - #5	(3) - #5	#3 @ 48"	#7 @ 6"	
WF5.0	5'-0" X 3'-0"	(4) - #5	(7) - #9	#5 @ 16"	#6 @ 6"	
WF8.0	8'-0" X 2'-6"	(6) - #6	(6) - #6	#3 @ 48"	#9 @ 12"	

Revisions: | Date

VA | U.S. Department of Veterans Affairs
Michael E. DeBakey VAMC
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MARK A VANDERWOUDE REGISTERED NO. 10809552 STATE OF INDIANA PROFESSIONAL ENGINEER

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GUIDON DESIGN
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100% CONSTRUCTION DOCUMENTS

Drawing Title: FOUNDATION SCHEDULES AND DETAILS

Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER

Project Title: BUILD PARKING GARAGE A

Guidon Design Project #: 14.1037

Building Number: 123

Location: Michael E. DeBakey VAMC, Houston, TX

Date: 2015/10/16 | Checked By: MAV | Drawn By: WJT

Drawing Number: SB601

OFFICE OF FACILITIES MANAGEMENT

VA Project Number: 580-321

VA | U.S. Department of Veterans Affairs

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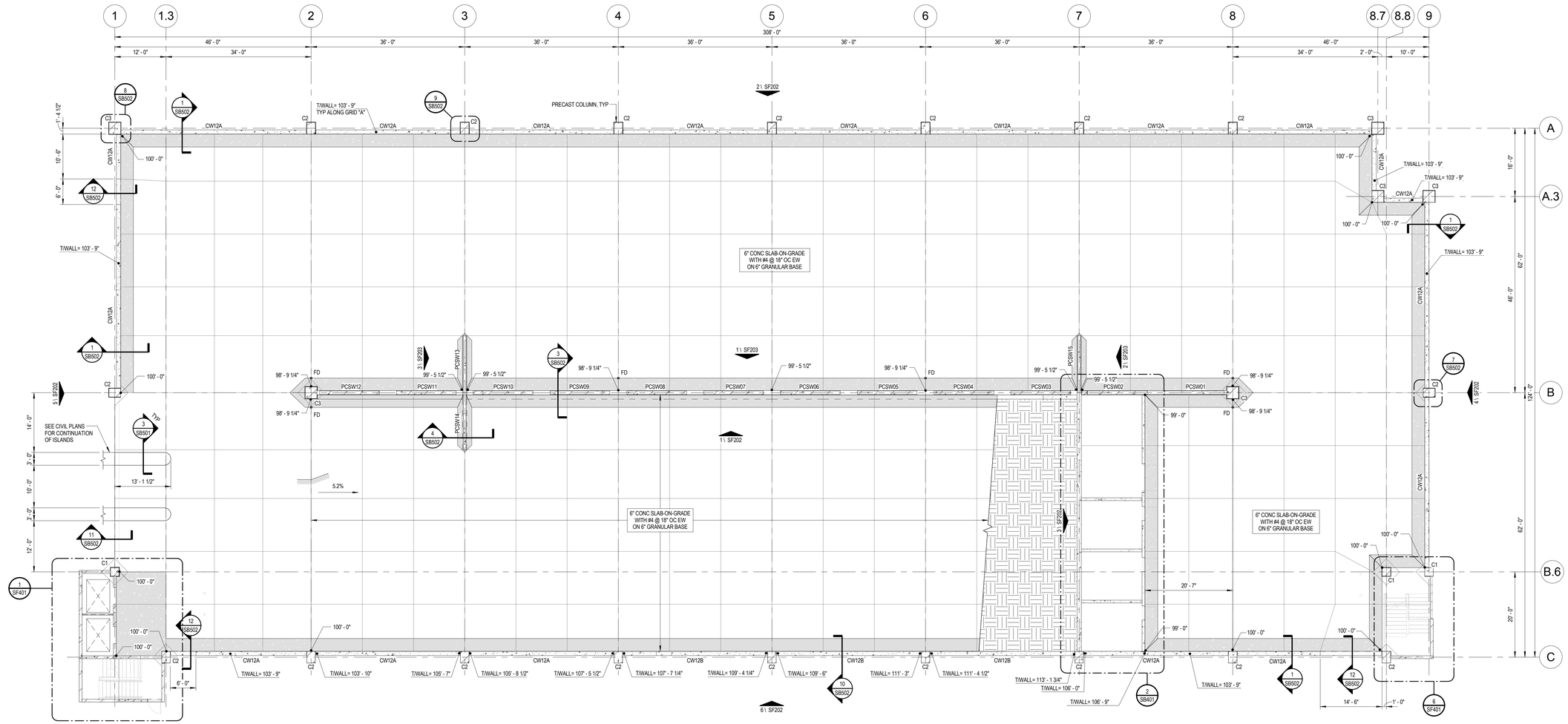


SLAB-ON-GRADE LEVEL 1

SF101 SCALE: 3/32" = 1'-0"

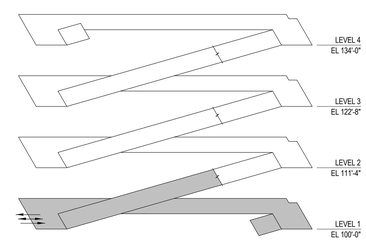
NOTES:

1. FINISH FLOOR ELEVATION VARIES. REFERENCE FINISH FLOOR ELEVATION (FIN FLR) = 100'-0". ELEVATION 100'-0" = USGS (41.50 FEET)
2. SEE SI001 FOR ABBREVIATIONS, SYMBOLS & LEGENDS
3. SEE SI002 FOR STRUCTURAL DESIGN LOAD INFORMATION
4. SEE SI003 FOR GENERAL STRUCTURAL NOTES
5. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR OPENINGS, STAIRS, DOWNSPOUTS RECESSES, ETC.
6. SEE PLAN FOR SLAB SPOT ELEVATIONS. ELEVATIONS DO NOT INCLUDE CONCRETE WASH.
7. INDICATES LOCATION WHERE THE CONCRETE WASH EXISTS, SEE 15/SB501.
8. SEE PLAN FOR SLAB ON GRADE CONSTRUCTION.
9. PROVIDE A 1" GAP BETWEEN ALL CAST-IN-PLACE FOUNDATION WALLS AND PRECAST COLUMNS, UNLESS NOTED OTHERWISE.
10. SEE AW SHEETS FOR WATERPROOFING AND JOINT DETAILS.
11. FOUNDATIONS HAVE BEEN DESIGNED TO INCLUDE 5 PSF FOR A FUTURE SOLAR PANEL SYSTEM AT THE TOP LEVEL. DESIGN ALL PRECAST COLUMNS AND BEARING WALLS TO SUPPORT THIS FUTURE LOAD.
12. PROVIDE WALL BRACING UNTIL ALL SLABS ON GRADE ARE IN PLACE FOR WALLS ALONG GRID C BETWEEN GRIDS 2 AND 7 AND ALONG GRID 7.
13. PREPARE SUBGRADE PER GEOTECH REPORT SECTIONS "4.2 EARTH WORK" & 4.4 FLOOR SLAB".PROVIDE A MINIMUM OF 5 FEET OF PROPERLY PLACED AND COMPACTED SELECT FILL MATERIAL BENEATH THE FLOOR SLAB.

COLUMN SCHEDULE

MARK	SIZE	REMARKS
C1	24"x24"	
C2	33"x24"	
C3	33"x33"	

N



ISOMETRIC KEYPLAN

Revisions: | Date

U.S. Department of Veterans Affairs
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100% CONSTRUCTION DOCUMENTS

Drawing Title: SLAB ON GRADE LEVEL 1	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF101	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs

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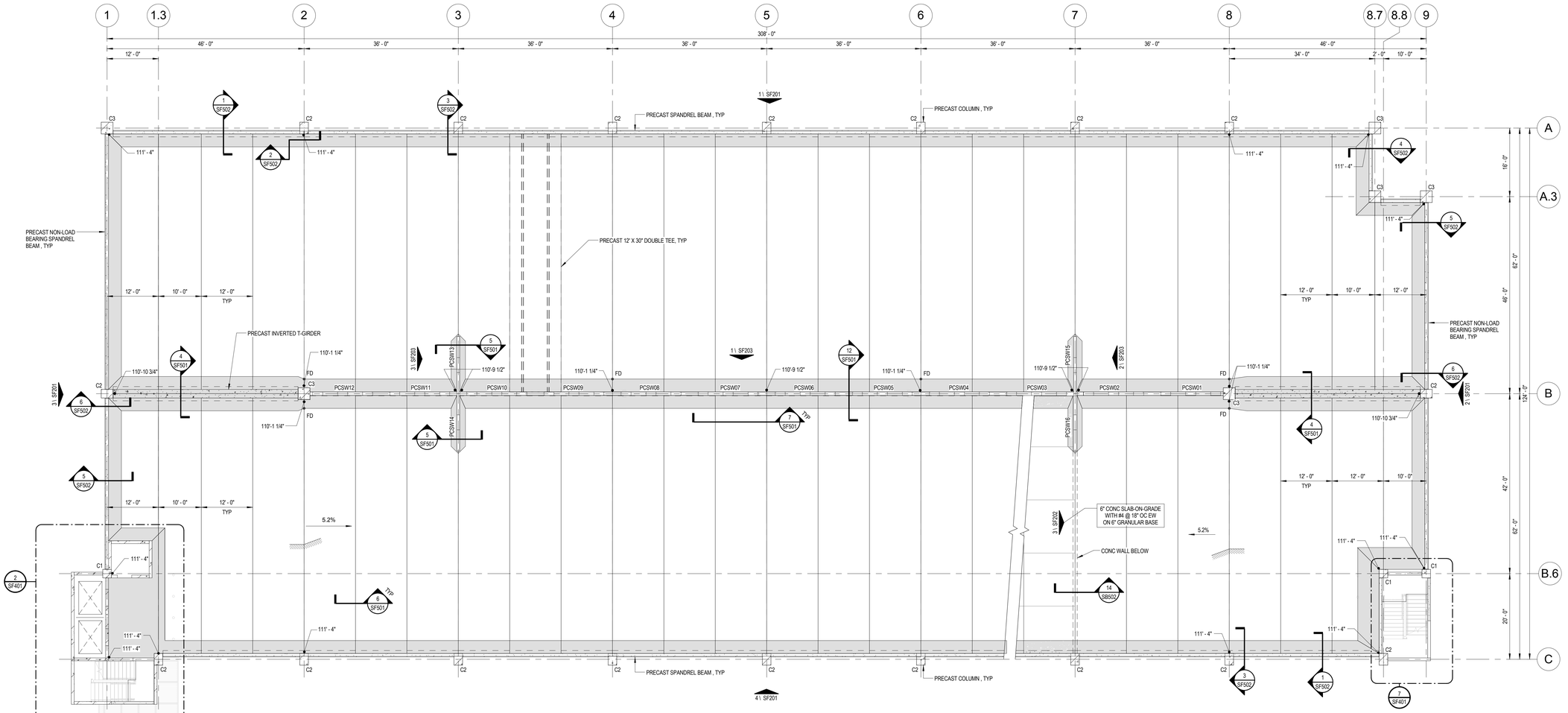

1 SF102 FRAMING PLAN LEVEL 2

SCALE: 3/32" = 1'-0"

NOTES:

1. FINISH FLOOR ELEVATION VARIES. REFERENCE FINISH FLOOR ELEVATION (FIN FLR) = 100'-0". ELEVATION 100'-0" = USGS (41.50 FEET)
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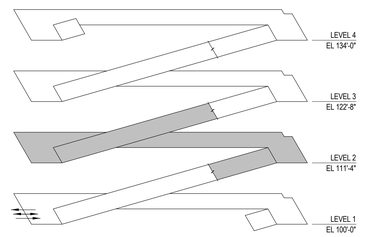
4. SEE SI003 FOR GENERAL STRUCTURAL NOTES
5. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR OPENINGS, STAIRS, DOWNSPOUTS RECESSES, ETC.
6. SEE PLAN FOR SLAB SPOT ELEVATIONS. ELEVATIONS DO NOT INCLUDE CONCRETE WASH.
7. INDICATES LOCATION WHERE THE CONCRETE WASH EXISTS, SEE 15/S8501.
8. SEE PLAN FOR SLAB ON GRADE CONSTRUCTION.
9. PROVIDE A 1" GAP BETWEEN ALL CAST-IN-PLACE FOUNDATION WALLS AND PRECAST COLUMNS, UNLESS NOTED OTHERWISE.
10. SEE AW SHEETS FOR WATERPROOFING AND JOINT DETAILS.
11. FOUNDATIONS HAVE BEEN DESIGNED TO INCLUDE 5 PSF FOR A FUTURE SOLAR PANEL SYSTEM AT THE TOP LEVEL. DESIGN ALL PRECAST COLUMNS AND BEARING WALLS TO SUPPORT THIS FUTURE LOAD.
12. PROVIDE WALL BRACING UNTIL ALL SLABS ON GRADE ARE IN PLACE FOR WALLS ALONG GRID C BETWEEN GRIDS 2 AND 7 AND ALONG GRID 7.
13. PREPARE SUBGRADE PER GEOTECH REPORT SECTIONS "4.2 EARTH WORK" & 4.4 FLOOR SLAB".PROVIDE A MINIMUM OF 5 FEET OF PROPERLY PLACED AND COMPACTED SELECT FILL MATERIAL BENEATH THE FLOOR SLAB.

COLUMN SCHEDULE

MARK	SIZE	REMARKS
C1	24"x24"	
C2	33"x24"	
C3	33"x33"	



ISOMETRIC KEYPLAN

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Revisions:	Date

U.S. Department of Veterans Affairs

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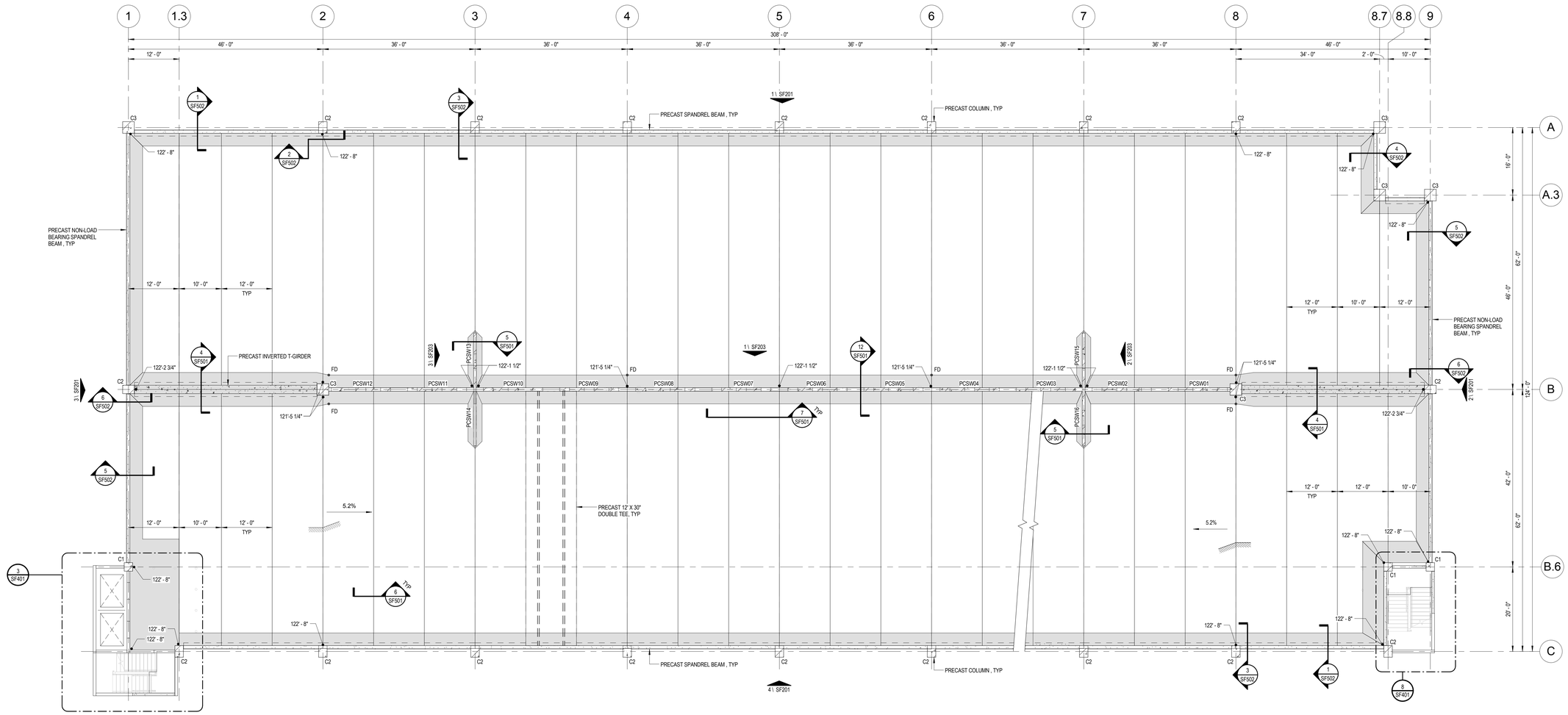
100% CONSTRUCTION DOCUMENTS

Drawing Title: FRAMING PLAN LEVEL 2	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF102	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		U.S. Department of Veterans Affairs



FRAMING PLAN LEVEL 3

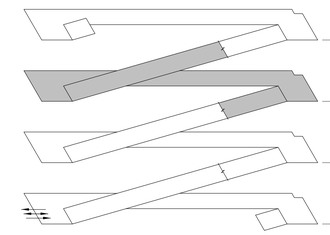
1 / SF103 SCALE: 3/32" = 1'-0"

NOTES:

1. FINISH FLOOR ELEVATION VARIES. REFERENCE FINISH FLOOR ELEVATION (FIN FLR) = 100'-0". ELEVATION 100'-0" = USGS (41.50 FEET)
2. SEE SI001 FOR ABBREVIATIONS, SYMBOLS & LEGENDS
3. SEE SI002 FOR STRUCTURAL DESIGN LOAD INFORMATION
4. SEE SI003 FOR GENERAL STRUCTURAL NOTES
5. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR OPENINGS, STAIRS, DOWNSPOUTS RECESSES, ETC.
6. SEE PLAN FOR SLAB SPOT ELEVATIONS. ELEVATIONS DO NOT INCLUDE CONCRETE WASH.
7. INDICATES LOCATION WHERE THE CONCRETE WASH EXISTS, SEE 15/SB501.
8. SEE PLAN FOR SLAB ON GRADE CONSTRUCTION.
9. PROVIDE A 1" GAP BETWEEN ALL CAST-IN-PLACE FOUNDATION WALLS AND PRECAST COLUMNS, UNLESS NOTED OTHERWISE.
10. SEE AW SHEETS FOR WATERPROOFING AND JOINT DETAILS.
11. FOUNDATIONS HAVE BEEN DESIGNED TO INCLUDE 5 PSF FOR A FUTURE SOLAR PANEL SYSTEM AT THE TOP LEVEL. DESIGN ALL PRECAST COLUMNS AND BEARING WALLS TO SUPPORT THIS FUTURE LOAD.
12. PROVIDE WALL BRACING UNTIL ALL SLABS ON GRADE ARE IN PLACE FOR WALLS ALONG GRID C BETWEEN GRIDS 2 AND 7 AND ALONG GRID 7.
13. PREPARE SUBGRADE PER GEOTECH REPORT SECTIONS "4.2 EARTH WORK" & 4.4 FLOOR SLAB".PROVIDE A MINIMUM OF 5 FEET OF PROPERLY PLACED AND COMPACTED SELECT FILL MATERIAL BENEATH THE FLOOR SLAB.

COLUMN SCHEDULE

MARK	SIZE	REMARKS
C1	24"x24"	
C2	33"x24"	
C3	33"x33"	



ISOMETRIC KEYPLAN

Revisions: | Date

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100% CONSTRUCTION DOCUMENTS

Drawing Title: FRAMING PLAN LEVEL 3	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF103	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs

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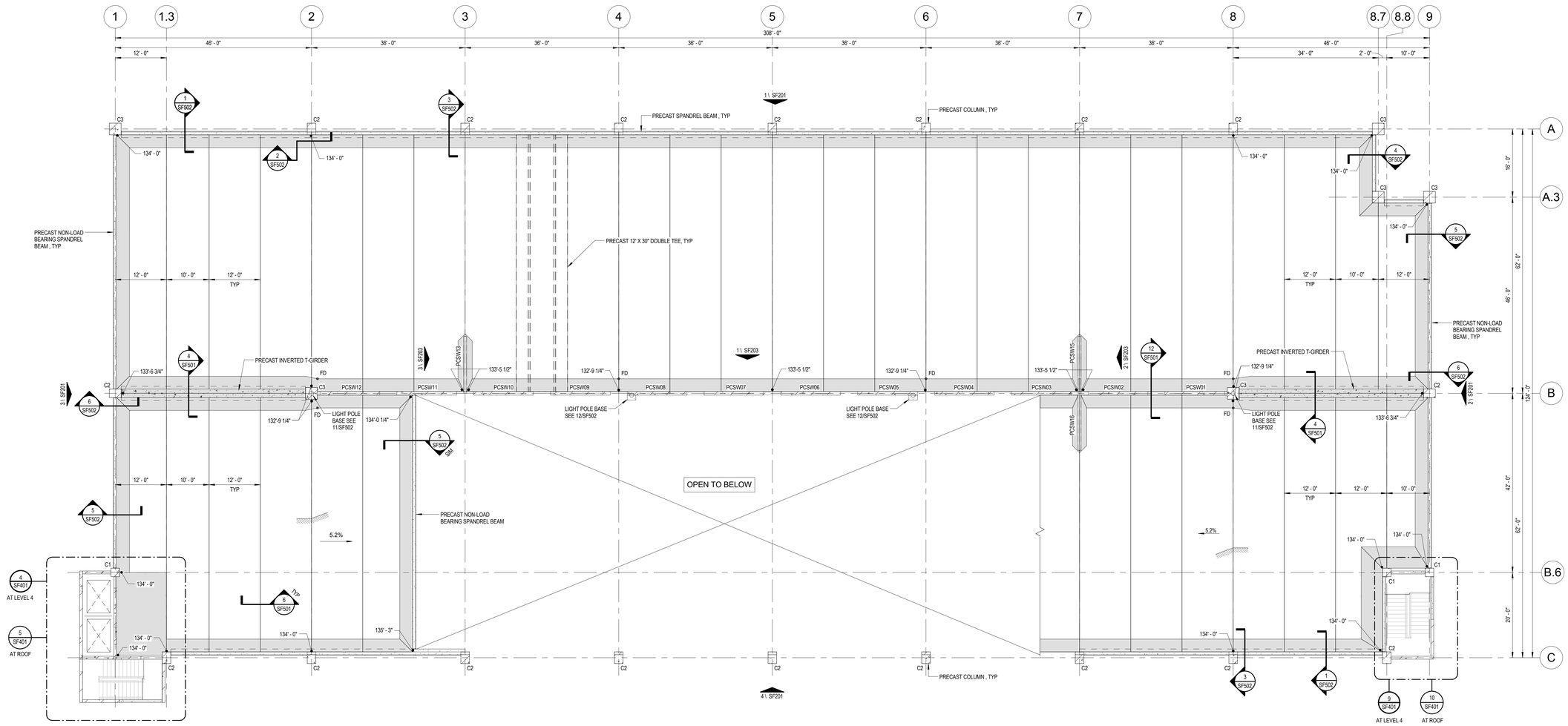


FRAMING PLAN LEVEL 4

1 / SF104 SCALE: 3/32" = 1'-0"

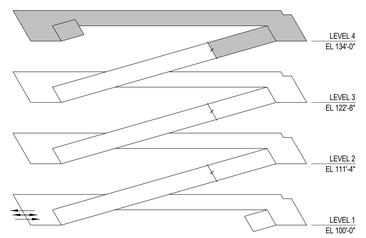
NOTES:

1. FINISH FLOOR ELEVATION VARIES. REFERENCE FINISH FLOOR ELEVATION (FIN FLR) = 100'-0", ELEVATION 100'-0" = USGS (41.50 FEET)
2. SEE S1001 FOR ABBREVIATIONS, SYMBOLS & LEGENDS.
3. SEE S1002 FOR STRUCTURAL DESIGN LOAD INFORMATION
4. SEE S1003 FOR GENERAL STRUCTURAL NOTES
5. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR OPENINGS, STAIRS, DOWNSPOUTS RECESSES, ETC.
6. SEE PLAN FOR SLAB SPOT ELEVATIONS. ELEVATIONS DO NOT INCLUDE CONCRETE WASH.
7. INDICATES LOCATION WHERE THE CONCRETE WASH EXISTS, SEE 15/S8501.
8. SEE PLAN FOR SLAB ON GRADE CONSTRUCTION.
9. PROVIDE A 1" GAP BETWEEN ALL CAST-IN-PLACE FOUNDATION WALLS AND PRECAST COLUMNS, UNLESS NOTED OTHERWISE.
10. SEE AW SHEETS FOR WATERPROOFING AND JOINT DETAILS.
11. FOUNDATIONS HAVE BEEN DESIGNED TO INCLUDE 5 PSF FOR A FUTURE SOLAR PANEL SYSTEM AT THE TOP LEVEL. DESIGN ALL PRECAST COLUMNS AND BEARING WALLS TO SUPPORT THIS FUTURE LOAD.
12. PROVIDE WALL BRACING UNTIL ALL SLABS ON GRADE ARE IN PLACE FOR WALLS ALONG GRID C BETWEEN GRIDS 2 AND 7 AND ALONG GRID 7.
13. PREPARE SUBGRADE PER GEOTECH REPORT SECTIONS "4.2 EARTH WORK" & 4.4 FLOOR SLAB".PROVIDE A MINIMUM OF 5 FEET OF PROPERLY PLACED AND COMPACTED SELECT FILL MATERIAL BENEATH THE FLOOR SLAB.

COLUMN SCHEDULE

MARK	SIZE	REMARKS
C1	24"x24"	
C2	33"x24"	
C3	33"x33"	

N



ISOMETRIC KEYPLAN

Revisions: | Date

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100% CONSTRUCTION DOCUMENTS

Drawing Title: FRAMING PLAN LEVEL 4	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF104	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs

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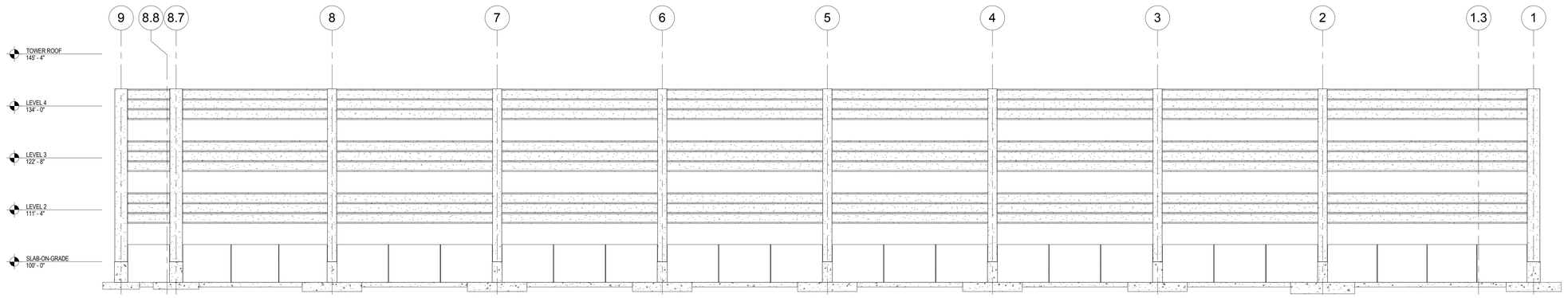
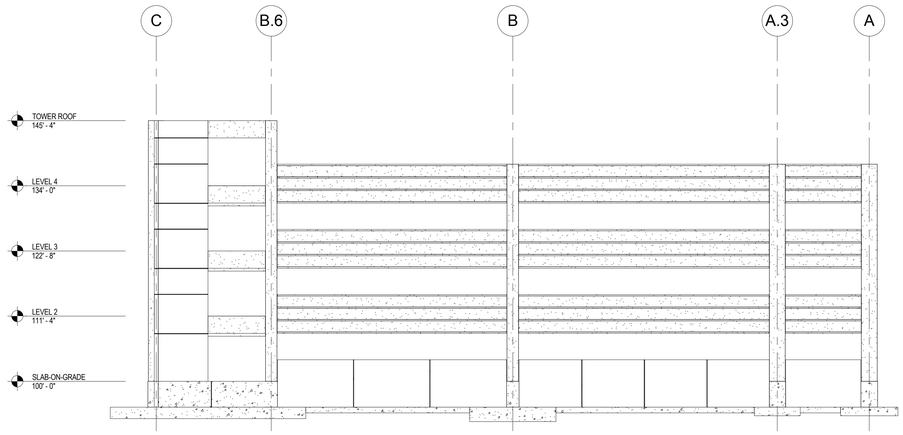
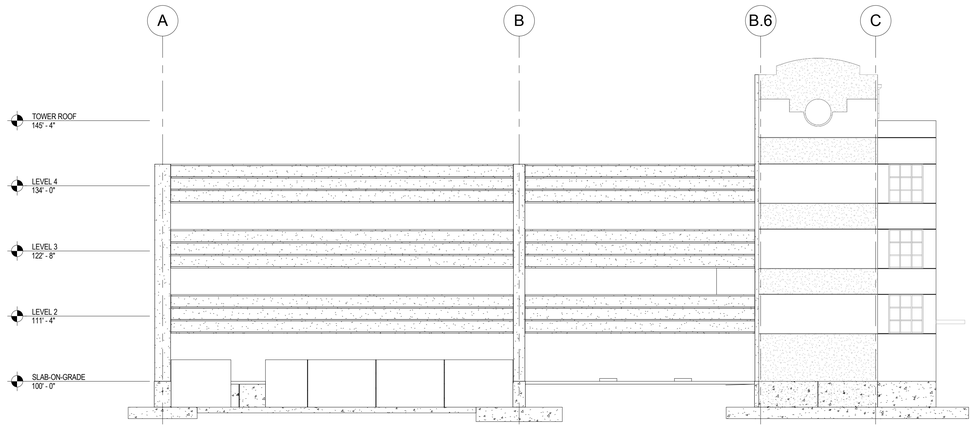


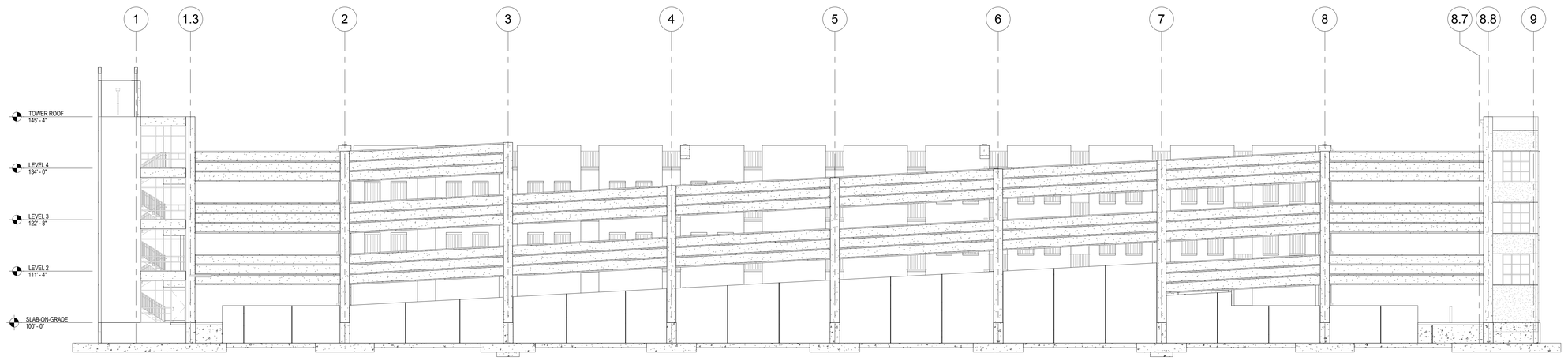
1 SF201 **WEST**
SCALE: 3/32" = 1'-0"



2 SF201 **NORTH**
SCALE: 3/32" = 1'-0"



3 SF201 **SOUTH**
SCALE: 3/32" = 1'-0"



4 SF201 **EAST**
SCALE: 3/32" = 1'-0"

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Revisions:	Date

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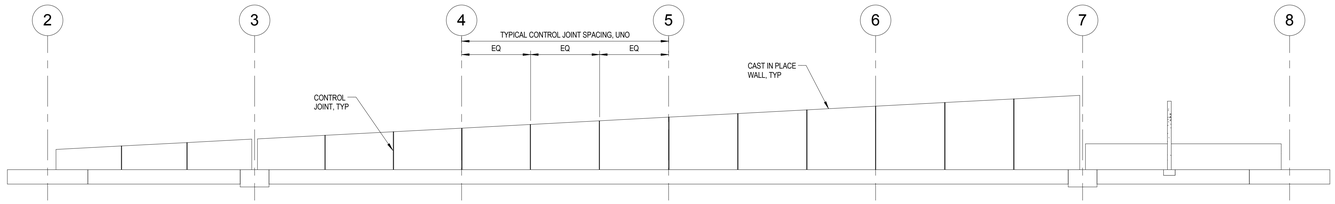
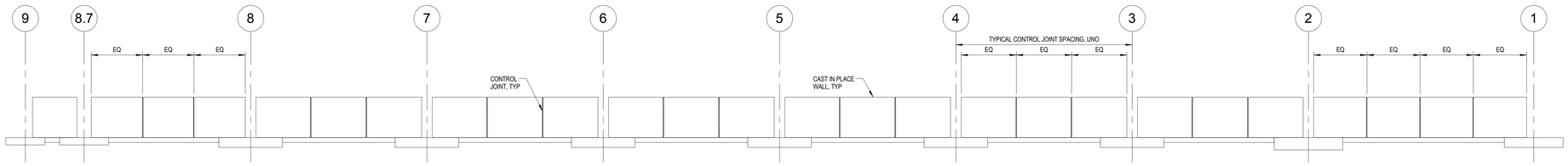
100% CONSTRUCTION DOCUMENTS

Drawing Title: BUILDING ELEVATIONS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF201	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs

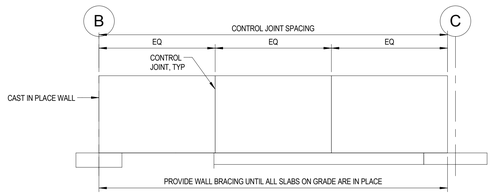
NOTE: INTENT OF ELEVATIONS IS TO SHOW WALL CONTROL JOINTS. PRECAST WALLS AND COLUMNS NOT SHOWN FOR CLARITY



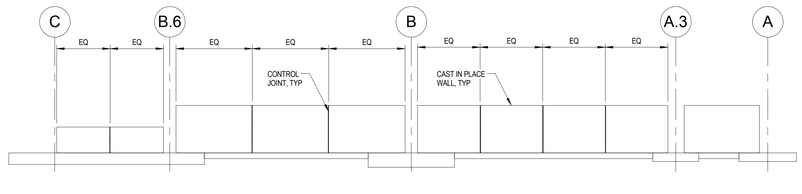
1 SF202 **GRADE WALL ELEVATION @ GRID B**
SCALE: 3/32" = 1'-0"



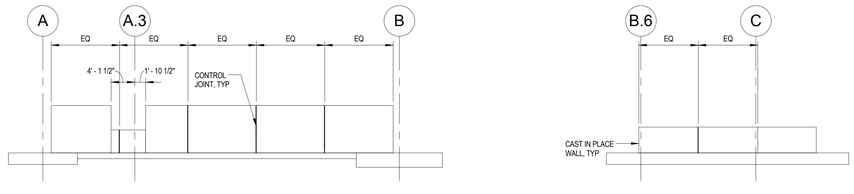
2 SF202 **GRADE WALL ELEVATION @ GRID A & A.3**
SCALE: 3/32" = 1'-0"



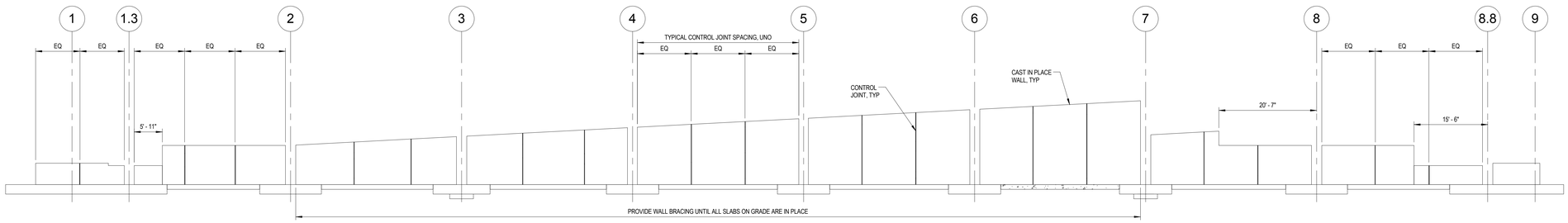
3 SF202 **GRADE WALL ELEVATION @ GRID 7**
SCALE: 3/32" = 1'-0"



4 SF202 **GRADE WALL ELEVATION @ GRID 8.7 & 9**
SCALE: 3/32" = 1'-0"



5 SF202 **GRADE WALL ELEVATION @ GRID 1 & 1.3**
SCALE: 3/32" = 1'-0"



6 SF202 **GRADE WALL ELEVATION @ GRID C**
SCALE: 3/32" = 1'-0"

Revisions:	Date

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100% CONSTRUCTION DOCUMENTS

Drawing Title: CAST IN PLACE WALL ELEVATIONS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Building Number: 123	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT	Drawing Number: SF202	U.S. Department of Veterans Affairs

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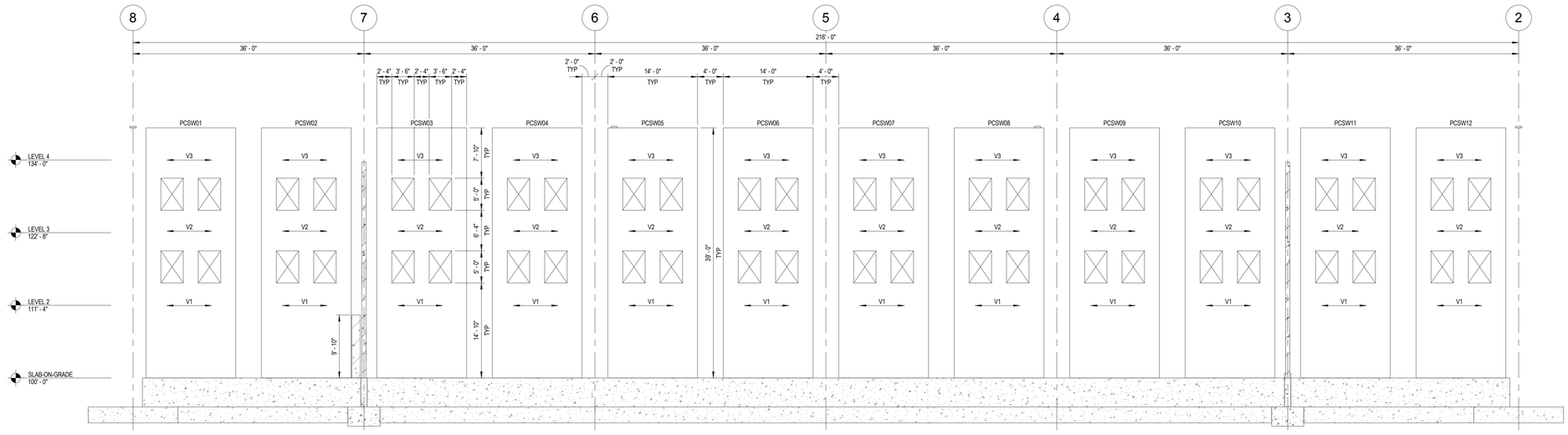
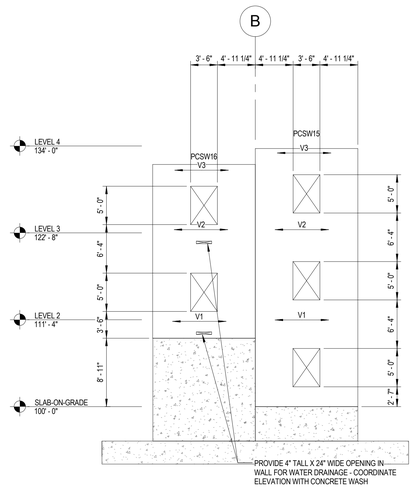


1 / SF203 **INTERIOR SHEARWALL ELEVATION @ GRID B**
SCALE: 1/8" = 1'-0"

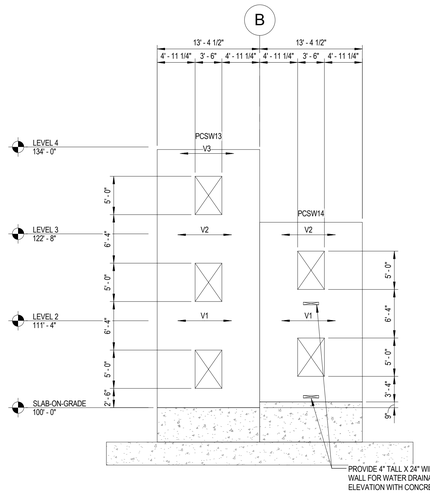
NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR REVEAL DIMENSIONS AND PANEL COLORS.

SHEARWALL SCHEDULE

WALL	THICKNESS	LENGTH	DESIGN REACTIONS DEAD LOAD (KIPS/FT)	LIVE LOAD (KIPS/FT)	TOTAL LOAD (KIPS/FT)	REMARKS
PCSW01	10"	14' - 0"	26	10	36	
PCSW02	10"	14' - 0"	26	10	36	
PCSW03	10"	14' - 0"	24	8	32	
PCSW04	10"	14' - 0"	24	8	32	
PCSW05	10"	14' - 0"	24	8	32	
PCSW06	10"	14' - 0"	24	8	32	
PCSW07	10"	14' - 0"	24	8	32	
PCSW08	10"	14' - 0"	24	8	32	
PCSW09	10"	14' - 0"	24	8	32	
PCSW10	10"	14' - 0"	24	8	32	
PCSW11	10"	14' - 0"	26	10	36	
PCSW12	10"	14' - 0"	26	10	36	
PCSW13	8"	13' - 4 1/2"	8	1	9	
PCSW14	8"	13' - 4 1/2"	8	1	9	
PCSW15	8"	13' - 4 1/2"	9	1	10	
PCSW16	8"	13' - 4 1/2"	10	2	12	



2 / SF203 **INTERIOR SHEARWALL ELEVATION GRID 7**
SCALE: 1/8" = 1'-0"



3 / SF203 **INTERIOR SHEARWALL ELEVATION @ GRID 3**
SCALE: 1/8" = 1'-0"

SHEARWALL LATERAL FORCE DISTRIBUTION SCHEDULE

LOAD ID		PCSW01		PCSW02		PCSW03		PCSW04		PCSW05		PCSW06		PCSW07		PCSW08		PCSW09		PCSW10		PCSW11		PCSW12		PCSW13		PCSW14		PCSW15		PCSW16	
		Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)	Kip	Elev (ft)
V3		5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00	5	134.00		134.00	20.00	134.00	20.00	134.00	20.00	134.00
V2		10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	10	122.67	30.00	122.67	30.00	122.67	30.00	122.67	30.00	122.67
V1		13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	13	111.34	40.00	111.34	40.00	111.34	40.00	111.34	40.00	111.34
TOTAL @ TOP	V	28	K	28	K	28	K	28	K	28	K	28	K	28	K	28	K	28	K	28	K	28	K	28	K	70	K	90	K	90	K	90	K
OF FOOTING	M	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	544.09	K-FT	1133.60	K-FT	1813.60	K-FT	1813.60	K-FT	1813.60	K-FT

Revisions:	Date

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100% CONSTRUCTION DOCUMENTS

Drawing Title: SHEARWALL ELEVATIONS AND SCHEDULES	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF203	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT		U.S. Department of Veterans Affairs

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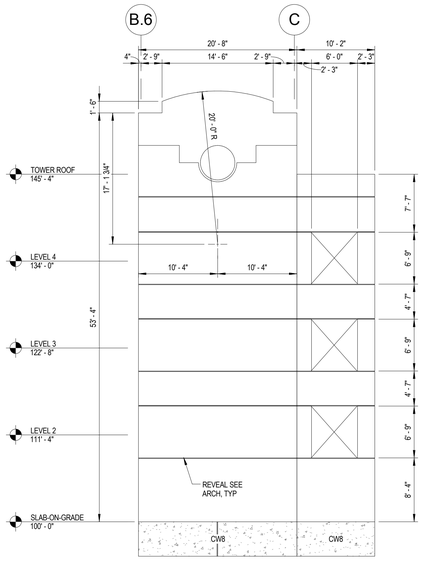
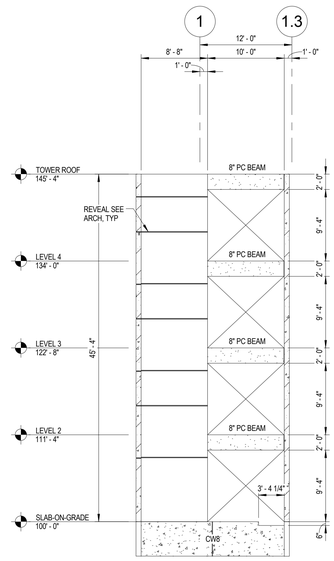
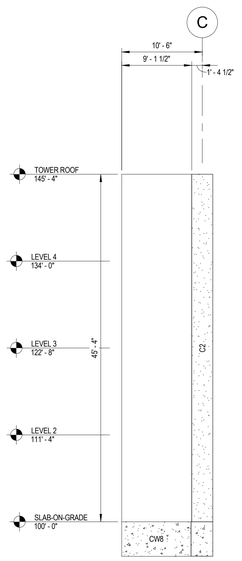


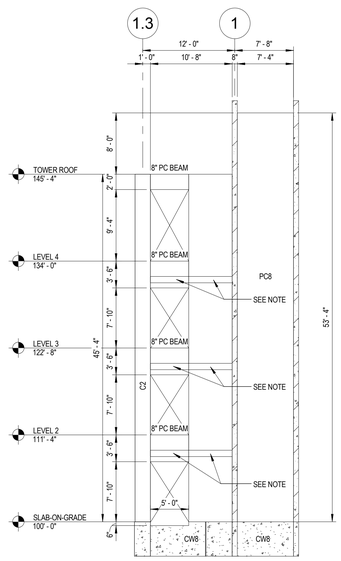
1 SF204 **PRECSAT ELEVATION @ EXTERIOR SOUTH ELEVATOR WALL**
SCALE: 1/8" = 1'-0"



2 SF204 **PRECAST ELEVATION @ EXTERIOR EAST STAIR WALL**
SCALE: 1/8" = 1'-0"

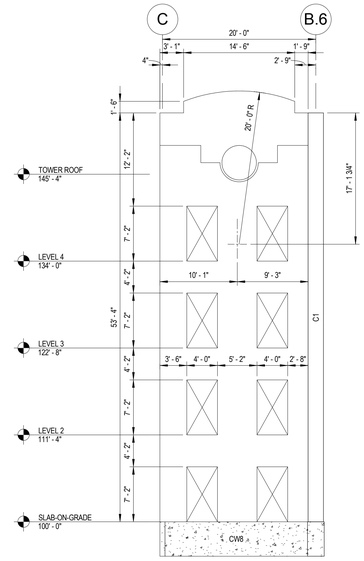


3 SF204 **PRECAST ELEVATION @ GRID 1.3**
SCALE: 1/8" = 1'-0"

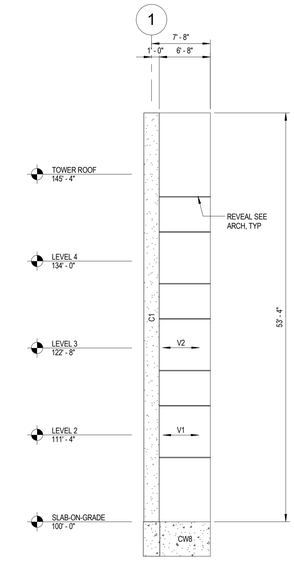


4 SF204 **PRECAST ELEVATION @ GRID C**
SCALE: 1/8" = 1'-0"

NOTE: DOUBLE TEE SUPPORT HAUNCH BY PC MFR

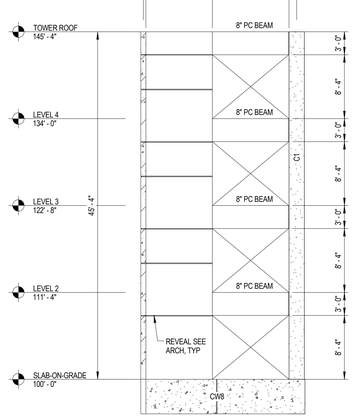


5 SF204 **PRECAST ELEVATION @ GRID 1**
SCALE: 1/8" = 1'-0"

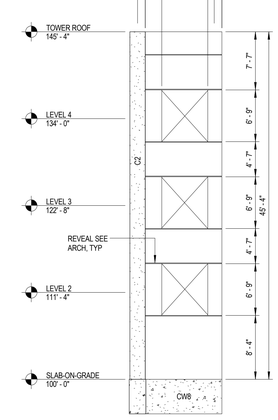


6 SF204 **PRECAST ELEVATION @ GRID B.6**
SCALE: 1/8" = 1'-0"

NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR REVEAL DIMENSIONS AND PANEL COLORS.



7 SF204 **PRECAST ELEVATION @ GRID 9**
SCALE: 1/8" = 1'-0"



8 SF204 **PRECAST ELEVATION @ GRID C**
SCALE: 1/8" = 1'-0"

Revisions:	Date

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U.S. Department of Veterans Affairs

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NO. 10809552
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ARCHITECT/ENGINEERS:

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100% CONSTRUCTION DOCUMENTS

Drawing Title: PRECAST ELEVATIONS AND SCHEDULES	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF204	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs

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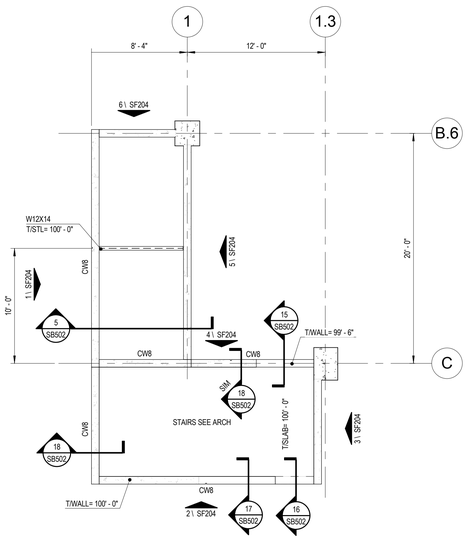
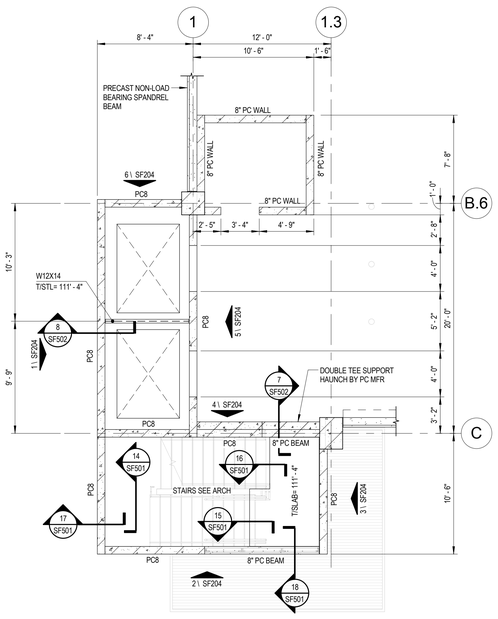
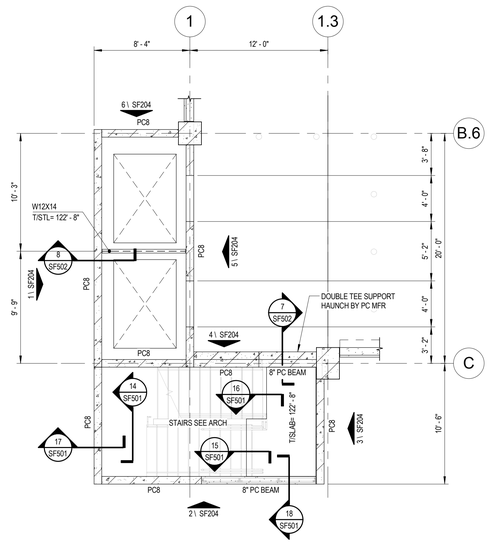


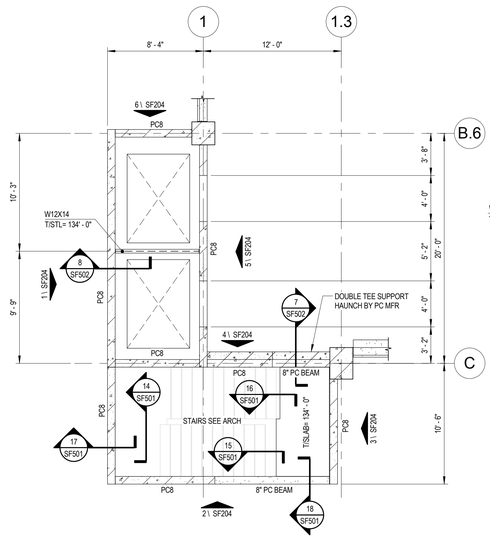
1 SF401 **ELEVATOR/STAIR TOWER @ SLAB-ON-GRADE**
SCALE: 3/16" = 1'-0"



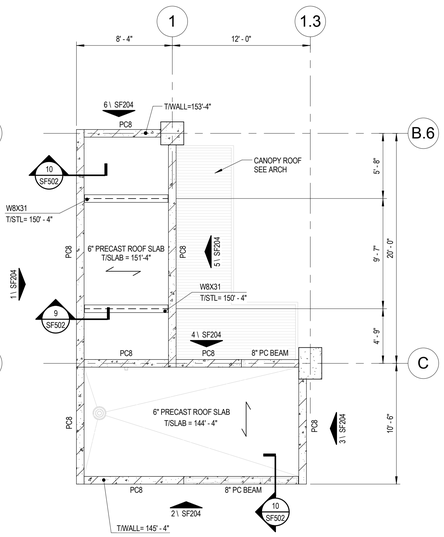
2 SF401 **ELEVATOR/STAIR TOWER LEVEL 2**
SCALE: 3/16" = 1'-0"



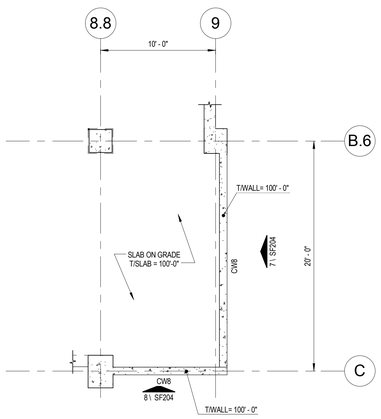
3 SF401 **ELEVATOR/STAIR TOWER LEVEL 3**
SCALE: 3/16" = 1'-0"



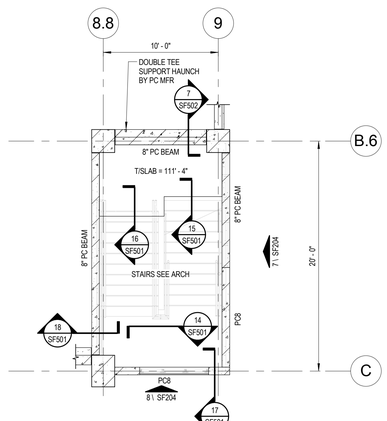
4 SF401 **ELEVATOR/STAIR TOWER LEVEL 4**
SCALE: 3/16" = 1'-0"



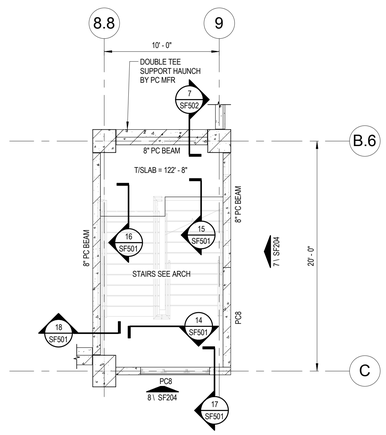
5 SF401 **ELEVATOR/STAIR TOWER ROOF**
SCALE: 3/16" = 1'-0"



6 SF401 **NORTH STAIR TOWER @ SLAB-ON-GRADE**
SCALE: 3/16" = 1'-0"



7 SF401 **NORTH STAIR TOWER LEVEL 2**
SCALE: 3/16" = 1'-0"



8 SF401 **NORTH STAIR TOWER LEVEL 3**
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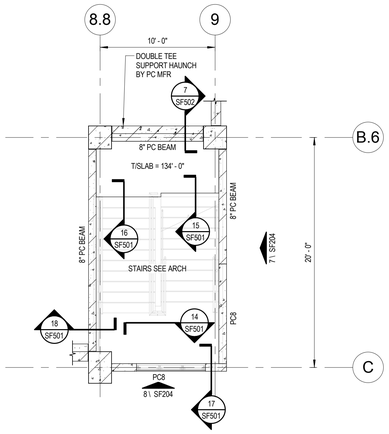
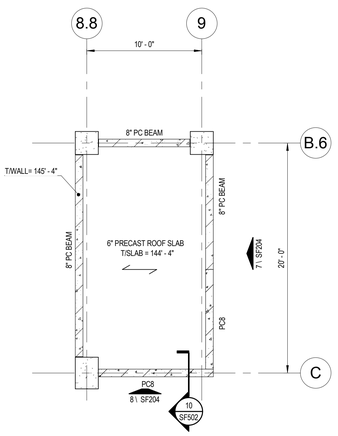


9 SF401 **NORTH STAIR TOWER LEVEL 4**
SCALE: 3/16" = 1'-0"



10 SF401 **NORTH STAIR TOWER ROOF**
SCALE: 3/16" = 1'-0"

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Revisions:	Date

VA | U.S. Department of Veterans Affairs
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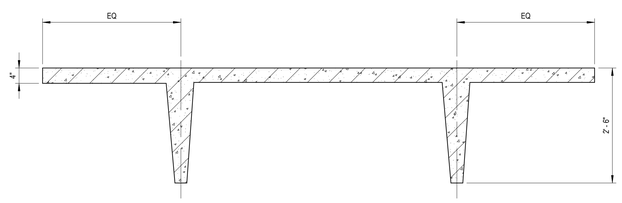
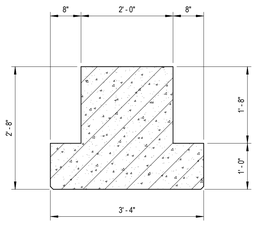
100% CONSTRUCTION DOCUMENTS

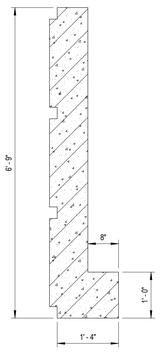
Drawing Title: ENLARGED STAIR PLANS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF401	VA Project Number: 580-321
	Date: 2015/10/16 · Checked By: MAV · Drawn By: WJT		VA | U.S. Department of Veterans Affairs



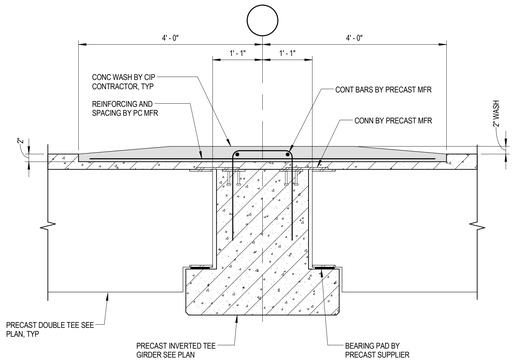
1 SF501 **TYPICAL PRECAST PRE-TOPPED DOUBLE TEE**
SCALE: 3/4" = 1'-0"



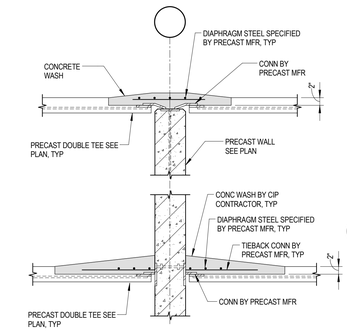
2 SF501 **TYPICAL PRECAST INVERTED TEE BEAM**
SCALE: 3/4" = 1'-0"



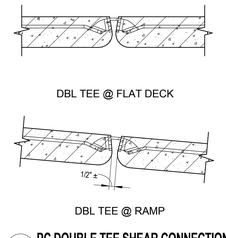
3 SF501 **TYPICAL PC SPANDREL BEAM**
SCALE: 3/4" = 1'-0"



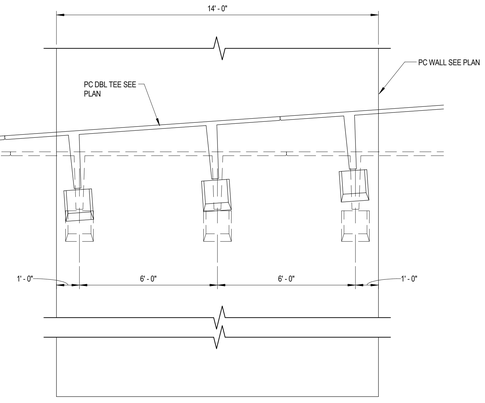
4 SF501 **PRECAST DOUBLE TEE AT INVERTED TEE BEAM**
SCALE: 3/4" = 1'-0"



5 SF501 **PC DOUBLE TEE TO WALL SHEAR CONNECTION**
SCALE: 3/4" = 1'-0"



6 SF501 **PC DOUBLE TEE SHEAR CONNECTION**
SCALE: 1 1/2" = 1'-0"



7 SF501 **RAMP WALL ELEVATION**
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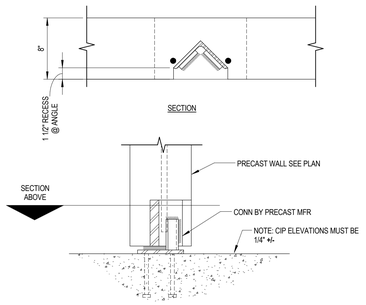
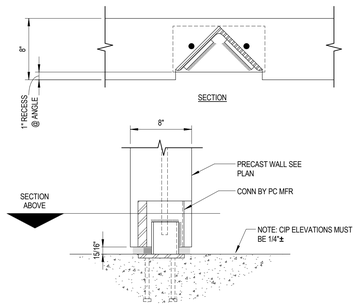


8 SF501 **PRECAST WALL TO CIP CONNECTION**
SCALE: 1 1/2" = 1'-0"



9 SF501 **ALTERNATE PRECAST WALL TO CIP CONNECTION**
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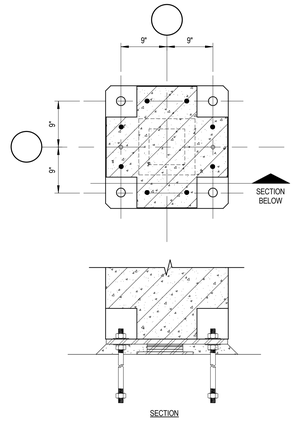

10 SF501 **PRECAST COLUMN BASE DETAIL**
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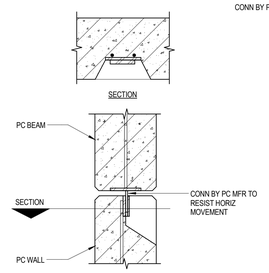
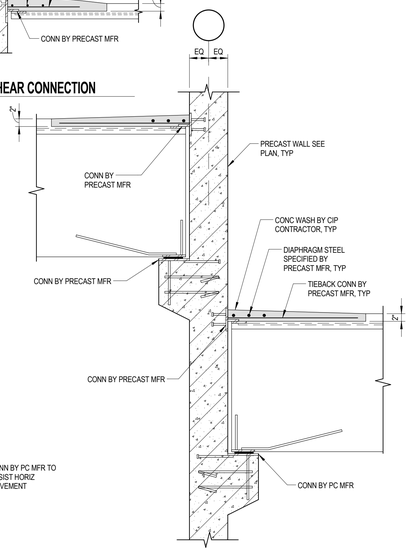
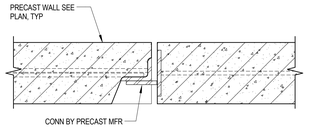


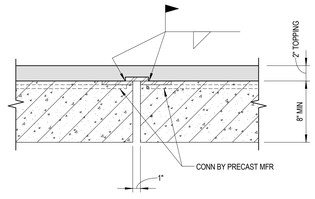
11 SF501 **TYPICAL PC BEAM ABOVE PC WALL DETAIL**
SCALE: 1" = 1'-0"



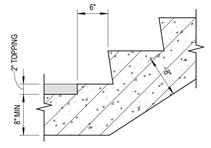
12 SF501 **DOUBLE TEE TO WALL CONNECTION**
SCALE: 3/4" = 1'-0"



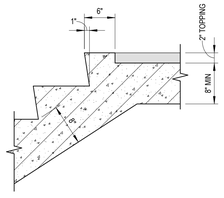
13 SF501 **PARALLEL WALL SECTION CONNECTION**
SCALE: 1 1/2" = 1'-0"



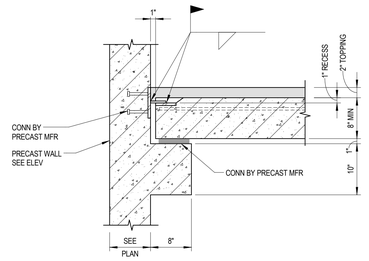
14 SF501 **STAIR TO STAIR CONNECTION**
SCALE: 1 1/2" = 1'-0"



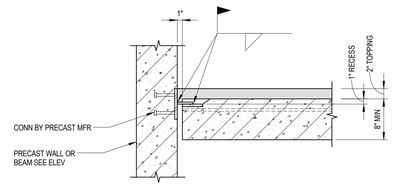
15 SF501 **LANDING AT STAIR BOTTOM**
SCALE: 1" = 1'-0"



16 SF501 **LANDING AT STAIR TOP**
SCALE: 1" = 1'-0"



17 SF501 **STAIR END TO WALL CONNECTION**
SCALE: 1" = 1'-0"



18 SF501 **STAIR SIDE TO WALL CONNECTION**
SCALE: 1" = 1'-0"

Revisions:	Date

Michael E. DeBakey VAMC
2002 Holcombe BLVD, Houston TX 77030

U.S. Department of Veterans Affairs

MARK A VANDERWILDE REGISTERED NO. 10809552 STATE OF INDIANA PROFESSIONAL ENGINEER

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100% CONSTRUCTION DOCUMENTS

Drawing Title: TYPICAL PRECAST DETAILS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF501	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT		U.S. Department of Veterans Affairs

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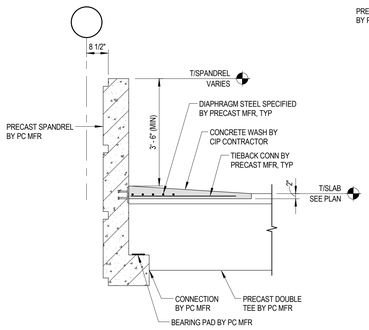

1 SF502 **SECTION**
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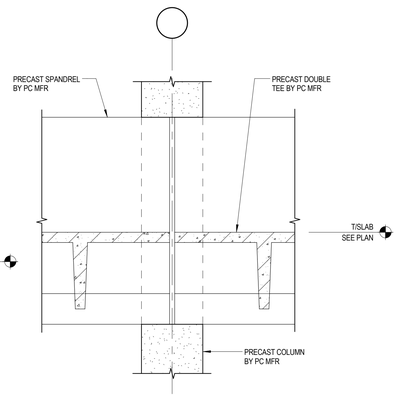

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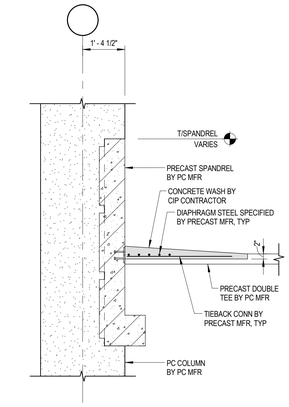

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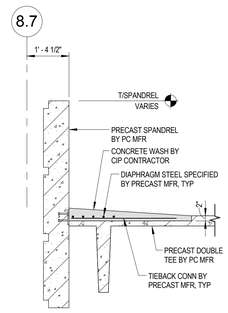

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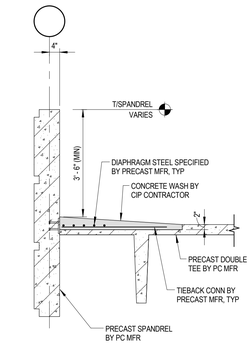

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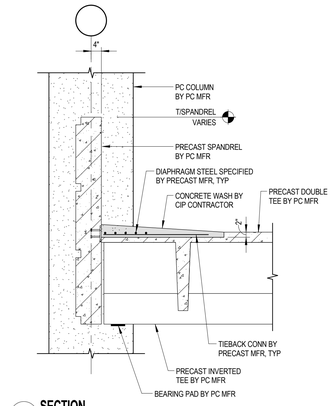
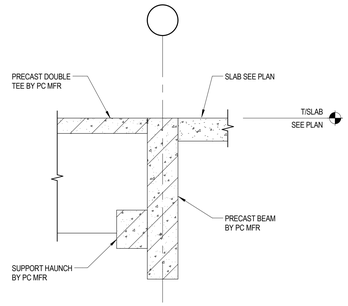
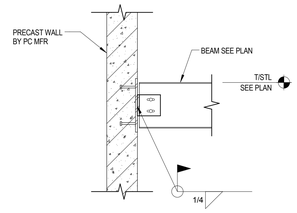


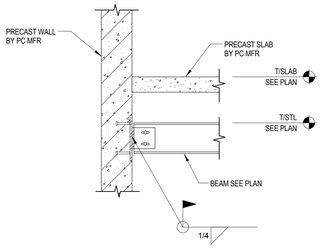
6 SF502 **SECTION**
SCALE: 1/2" = 1'-0"



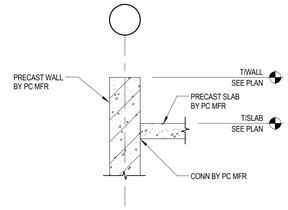
7 SF502 **SECTION**
SCALE: 3/4" = 1'-0"



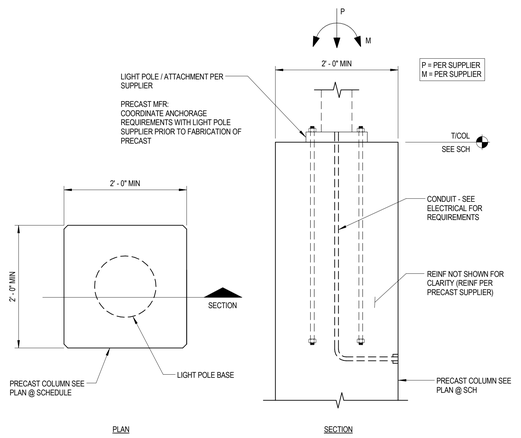
8 SF502 **SECTION**
SCALE: 3/4" = 1'-0"



9 SF502 **SECTION**
SCALE: 3/4" = 1'-0"

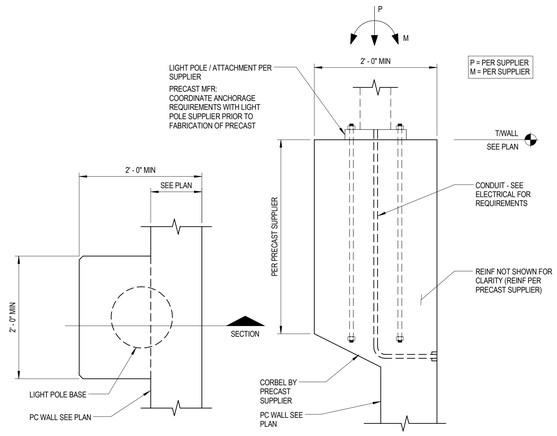


10 SF502 **SECTION**
SCALE: 3/4" = 1'-0"



NOTE:
VERIFY LIGHT POLE BASE SIZE AND CONNECTION REQUIREMENTS WITH LIGHT POLE SUPPLIER

11 SF502 **TYPICAL LIGHT POLE BASE TO COLUMN DETAIL**
SCALE: 1" = 1'-0"



NOTE:
VERIFY LIGHT POLE BASE SIZE AND CONNECTION REQUIREMENTS WITH LIGHT POLE SUPPLIER

12 SF502 **TYPICAL LIGHT POLE BASE TO WALL DETAIL**
SCALE: 1" = 1'-0"

Revisions:	Date

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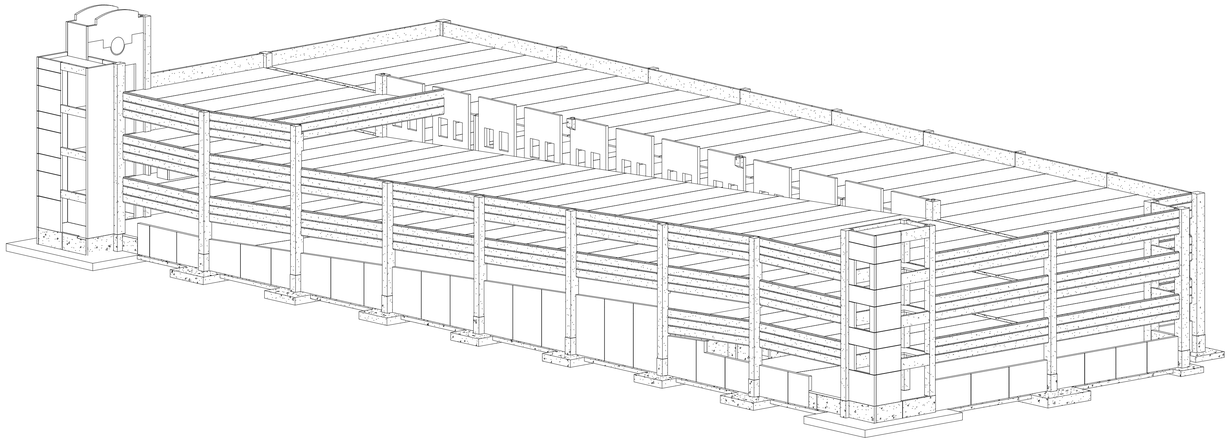
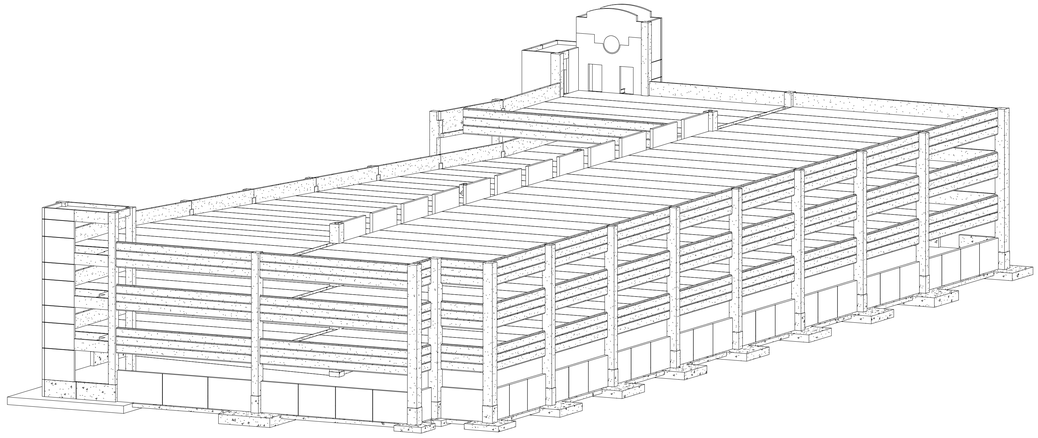
100% CONSTRUCTION DOCUMENTS

Drawing Title: FRAMING SECTIONS AND DETAILS	Project Title: BUILD PARKING GARAGE A	Guidon Design Project #: 14.1037	OFFICE OF FACILITIES MANAGEMENT
		Building Number: 123	
Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER	Location: Michael E. DeBakey VAMC, Houston, TX	Drawing Number: SF502	VA Project Number: 580-321
	Date: 2015/10/16 — Checked By: MAV — Drawn By: WJT		U.S. Department of Veterans Affairs

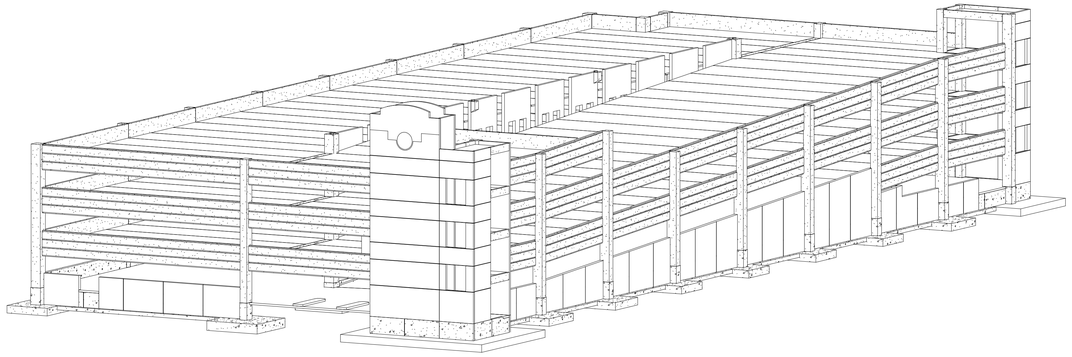
C:\Users\bthomas\Documents\14.1037-S-Houston VA Garage_bthomas.rvt



1 SF901 **NORTHEAST ISOMETRIC**
SCALE:



2 SF901 **NORTHWEST ISOMETRIC**
SCALE:



3 SF901 **SOUTHEAST ISOMETRIC**
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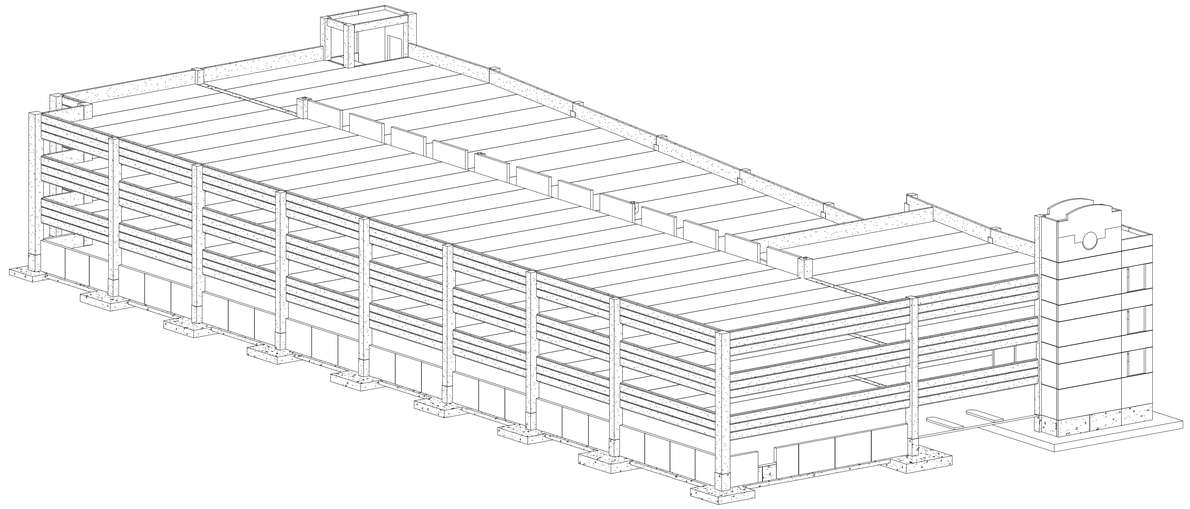

4 SF901 **SOUTHWEST ISOMETRIC**
SCALE:

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Revisions:	Date

VA | U.S. Department of Veterans Affairs

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100% CONSTRUCTION DOCUMENTS

Drawing Title: ISOMETRICS

Project Title: BUILD PARKING GARAGE A

Guidon Design Project #: 14.1037

Building Number: 123

OFFICE OF FACILITIES MANAGEMENT

Approved for Design Concept: FACILITY MANAGEMENT DIVISION MANAGER

Location: Michael E. DeBakey VAMC, Houston, TX

Date: 2015/10/16 | Checked By: MAV | Drawn By: WJT

Drawing Number: SF901

VA Project Number: 580-321

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